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CONTENTS.

Original Communications.

The Continuous Use of Digitaline in the Vasomotor and Cardiac Lesions of Senility. By Henry Beates, M.D. ... 721
The Etiology and Treatment of Laryngeal Tuberculosis. By P. S. Donnellan, M.D. ... 724
Note on a Simple Method of Curing Aphonia. By Albert Abrams, A.M., M.D ... 726
The Value of Systematic Physical Training in the Prevention and Cure of Pulmonary Tuberculosis. By E. Fletcher Ingals, M.D. ... 726
Apocynum Cannabinum—"The Vegetable Trocar." By T. S. Dabney, M.D ... 730

Leading Articles.

The Operative Treatment of Intestinal Perforation in Typhoid Fever 738
Thyroid Therapy ... 740
Iron and Opium in Bright's Disease 740
Some Recent Improvements in Aseptic Technique ... 741

Reports on Therapeutic Progress.

The Use of Serum-therapy in Poisoning by Mushrooms ... 737
Ulceration of the Stomach ... 744
Puerperal Eclampsia ... 744
The Use of Iron and Opium in Bright's Disease ... 746
Post-partum Hemorrhage ... 748
Temporary Relief of Toothache ... 749
On the Use of the Senecios in Functional Amenorrhea ... 750
Rheumatic Pericarditis and its Treatment ... 752
The Treatment of Acute Peritoneal Tuberculosis ... 752
Arrest of Hemorrhage from Large Vessels by Suturing ... 752
The Anaphrodisiac Action of Thyroidin ... 753
The Value of Certain Drugs in the Treatment of Gout ... 753
The Treatment of Uremic Convulsions and Coma, with Special Reference to the Senile Kidney ... 753
The Treatment of Suppuration by Bicarbonate of Soda ... 757
Some Remarks upon a New Mydriatic ... 757
Surgical Shock ... 758
The Treatment of Ruptured Uterus by Means of Gauze Packing ... 759
The Exercise Treatment of Locomotor Ataxia ... 761
The Removal of Foreign Bodies from the Upper Air-passages ... 762
The Use and Abuse of Hypnotics in Insomnia ... 762
Prescriptions for Acne ... 763
The After-treatment of Nasal Operative Wounds ... 763
Appendicitis ... 764
The Treatment of Incontinence of Urine in Children with the Liquid Extract of Rhus Aromatica ... 765
The Salicylate of Methyl in the Treatment of Rheumatism ... 766
Strychnine in Alcoholism ... 766
Extraordinary Case of Horse-bite; the External Ear Completely Bitten Off and Successfully Replaced 766
The Influence on the Blood of Syphilitics Produced by Intravenous Injections of Mercury ... 767
The Thyroid Therapy ... 768
The Treatment of Hemorrhagic Nephritis ... 768
The Good Effects of Iodide of Arsenic in Infants Suffering from Scrofulosis ... 768
The Treatment for Intestinal Worms 769
The Influence of Formaldehyde upon Digestion ... 769
The Intranasal Use of Medicated Oils or Oily Fluids ... 769
Acute Pneumonia in Childhood ... 771
Intracerebral Injections of Antitoxin in the Treatment of Traumatic Tetanus ... 773
The Treatment of Chronic Nasopharyngitis ... 774
The Peculiar Susceptibility of Women to the Toxic Action of Sulphonal ... 775
Corneal Ulcers, Varieties and Treatment, with Special Reference to Subconjunctival Injections ... 776
Experimental Researches on the Effects of Different Anesthetics ... 777
The Treatment of Inoperable Sarcoma with the Mixed Toxins of Erysipelas and Bacillus Prodigiosus: Its Immediate and Final Results in One Hundred and Forty Cases ... 779
Asepsis in Operations ... 781
Hysteria and Brain Tumors ... 781
"Recurrent" Gonorrhea ... 782
Observations on Gastro-enterostomy at the Breslau Clinic ... 784

Reviews ... 786

Correspondence.

London Letter ... 791

Original Communications.

THE CONTINUOUS USE OF DIGITALINE IN THE VASOMOTOR AND CARDIAC LESIONS OF SENILITY.

BY HENRY BEATES, M.D.,
Philadelphia.

Senility embraces that period of life during which one or more functions, as well as nutritional metamorphoses, when compared with the manifestations of the vital unit possessed by the individual, are recognized to be prematurely waning, and thus many are the instances of men and women who, being endowed with vital energy sufficient to enroll them among the normal activities of advanced being, remain more or less disabled or invalided because of this premature failure of some special organ or system to adequately discharge function. This retrograde process has an insidious origin, manifesting itself much earlier in life than we are prone to imagine, and, primarily, as a rule, in the vasomotor system. This great system has not as yet received the attentive study it should, and its direct relationship to functional activity, whether it be of brain, special sense or organ, is such that it is not an exaggeration to state that life itself depends thereon.

Nutrition, then, active in the fullest sense

of the term, is the condition determining the normal relationship of function with vital unit and is intimately associated with the perfect fulfilment of vasomotor function, because the distribution of pabulum to each cell and organ is directly dependent upon the physiological integrity of this nervo-sanguineous system.

The first physiological symptoms of senility will almost invariably be found with some portion of the vasomotor system, and that which is most objective consists in preternatural fulness of the superficial veins. This condition, of course, represents a far more advanced, although not visible, disturbance in the minute radicles, both of the arterioles and venules, and when present for some length of time, is associated with the symptoms of diminished function; therefore we have slight defects in intellection; the details of every-day life are forgotten, and the victim finds it necessary to utilize the memorandum tablet, instead of relying upon memory. Sleep is less refreshing, and is interrupted by slight insomnia. Some failure in vision and obtunding of hearing coexist. Respiration is habitually augmented in rate, and the ordinary activities of life, formerly free from any sense of discomfort, are now associated with more or less dyspnea. The digestive organs are all less active than before, and the disturbances especially noticeable are those accompanied with passive hyperemia and diminished absorption. The disturbances of the hepatic functions manifest themselves in paroxysms of headache and pruritus; the itching of the nose is especially noticeable, and is often contemporaneously present with similar annoyances located in areas of the back and lower extremities. This symptom is also an evidence of diminished supply of pabulum to peripheral sensory nerve terminals. Emaciation, while not marked, is pronounced, and the usual rotundity, characteristic of the vigor of life, gives place to the well known diminution in weight and wrinkling of the skin. The function of the sphincters, especially the vesical, is markedly impaired, and the passive hyperemia of the kidney gives expression to its existence by albuminuria often associated with casts.

The group of symptoms just enumerated, if the condition is well advanced, frequently assumes a clinical picture similar to that of organic disease, and thus has the writer seen what he believed to be senile softening of the brain, presenting a typical clinical picture, as demonstrated by a failure to recognize the members of family, inability to realize living at home, and re-living boyhood life and oblivious to time and place, totally disappear under the treatment to be described —a fact demonstrating that the failure of functional activity may be due under these conditions, not to the death of the cell, but the absence of nutriment necessary to the maintenance of its vital phenomena. Of the cardiac conditions we have either fatty degeneration of the myocardium itself, cloudy swelling, or some type of retrograde change, either alone, which is exceedingly rare, or associated with gross lesions in the radicles and larger arteries.

Indeed, the changes in the cardiac muscle are, in ninety-nine cases of a hundred, *secondary* to a *primary* lesion of the peripheral arterial system. This fact is worthy of especial emphasis, and is to be considered in formulating a prognosis, other things being equal, with any given condition. Elsewhere will some facts associated with the physiology of the circulation be elaborated, and it will suffice in this connection to simply state that the *propelling* power of the arterial system, by reason of its vasomotor factors being diminished in senility and capable of being restored to the percentage longevity of vital unit involved, will result in the establishment of lost equilibrium. The symptoms associated with what has hitherto been considered "senile heart" are habitually augmented rate, diminution of resistance, and edema of the extremities; of course with these we have the bronchial disturbances, falsely called "asthma," and, in advanced cases, various forms of dropsy. The treatment of these cases with digitalis, alcohol, strychnine, strophanthus and nitroglycerin finds its limit of usefulness far down the scale of possible achievement, and the premature death of all such so afflicted has been the outcome of *secundum artem* methods.

It is taught that in the condition just described arterial tension is *increased*, and therefore digitalis should *not* be employed because by further augmenting arterial pressure it will produce apoplexy, and otherwise endanger the life of the sufferer. Careful study demonstrates that when the venous side of the circulation is tortuous and distended with blood, the arterial side possesses *less* than its normal, and while the aortic valves close with pronounced force, instead of its being the result of arterial tension, it is actually dependent upon the *weight of the column of blood*,

which, not being propelled by what may be considered vermicular contraction, fills the non-elastic vessel as if it were an iron pipe; therefore we have *weight* and not active force, and consequently *diminished* and not augmented arterial tension. What obtains in the aorta, is an expression of the whole arterial vasomotor system; consequently we have this disturbed circulatory equilibrium. The cerebral phenomena, so common in this condition, manifest themselves in their worst type, by symptoms suggestive of apoplexy, and not uncommonly does the patient complain of localized numbness, which after a shorter or longer duration culminates in confusion of thought, partial loss of consciousness, somnolency, loss or confusion of speech, and marked loss of power in groups of muscles.

This condition must not be confounded with true apoplexy, by which is meant rupture of a large arterial trunk, such as the middle meningeal or striate artery, because they are dependent upon either transient ischemias—that is, the terminal vessels failing to transmit blood to the part by reason of the lack of propelling power—or to actual ruptures of venous radicles, directly due to the overdistention characteristic of the venous side.

For years has the writer boldly treated these cases, with success, with heroic doses of this *special derivative* of digitalis, to be described.

The *continuous use* of the remedy is absolutely essential, because the senile condition underlying the causation of all of these phenomena is a permanently altered vasomotor system. The treatment with which these conditions have been successfully held in abeyance for years, and disabled life so improved that comfortable existence has been vouchsafed, is the exhibition of digitaline, and in doses necessary to produce the desired effect. The term "digitaline" is, by the shops, unfortunately employed to represent several active principles derived from digitalis, and as each one of these principles possesses an action peculiar to itself, many of which are diverse, it is evident why contradictory opinions prevail concerning the employment of this drug in this class of cases.

Merck's German digitaline, so called, is the drug the use of which for years has enabled the presentation of the above facts to be practicable. Chemically this is not "digitaline," but what should be called digitalein; it possesses a chemical formula of its own and is extracted from digitalis by a complicated process, after a tannate is first precipitated from an *infusion*. It is freely soluble in water and therefore especially adapted for hypodermic exhibition, and as it is only sparingly soluble in alcohol is present in the tincture in a correspondingly small percentage, and thus is seen the fact that it is a separate and distinct drug, as different from the other products as is morphine from arsenious acid. Its especial power is to restore the *propelling power of the arterial system*, whereby, secondarily, for obvious physiological reasons, the cardiac action approaches the normal, and thus is the circulation in the venous and arterial side balanced. This being accomplished, the vast group of morbid phenomena briefly indicated vanish. The doses necessary to effect this vary from the tenth as a minimum to one-half of a grain as the maximum, and must be exhibited from three to six times daily as the conditions demand. A number of cases have been taking this quantity for several years, and have presented no injurious consequences whatever.

If digitalis were used so unremittingly it might produce a cardiac hypertrophy; this is mentioned because the possibility of such an undesirable accident has been advanced as an argument against the continuous use of digitalis (crude drug).

Careful clinical study, having in view the detection of such a condition, with the use of digitaline, finds that the frequently increased area of cardiac dulness diminishes; therefore, other things being also considered, it can be legitimately concluded that hypertrophy is not produced by such method of administration. Again, various degrees of rigidity of the larger arteries, so commonly detected in advanced conditions of senile vasomotor disturbances, have largely vanished under the continuous use of the drug, and when the function of the artery is considered it is not difficult to understand that the "sclerosis" of the vessels, when not due to calcareous infiltration or atheromatous changes, is a true thickening and rigidity of the arterial walls, comparable with a similar process always present in the ligaments and capsules of a joint not functionally active, and, just as in the latter, when normal motion is restored, in the former we have, by reestablishment of the expansion and contraction necessary to calibration, nutritive activity operative, and normal plasticity of structure effected. When

normality is reestablished, it can be maintained by the continuous use of digitalein, just as long as the unit of vitality is endowed with time existence.

After the results above described have been secured, judgment and skill will determine a modification of the plan of administration of this valuable vasomotor agent. As a rule, after months of uninterrupted use of large doses, the tissues involved have reacquired that degree of normality which makes practicable the continuous exhibition of smaller doses, in order to maintain the restored circulatory equilibrium.

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*THE ETIOLOGY AND TREATMENT OF LARYNGEAL TUBERCULOSIS.**

By P. S. Donnellan, M.D.,

Graduate of the Royal College of Physicians and Surgeons, Ireland; Fellow of the College of Physicians, Philadelphia; Laryngologist to St. Mary's and St. Agnes' Hospitals, Philadelphia.

The presence at the clinic to-day of three cases of laryngeal tuberculosis, each presenting a different stage of the disease, gives me the opportunity to make some observations on its etiology and treatment. Before we examine the patients I wish to refresh your memories with a few remarks on the diagnosis of tubercular laryngitis in order that you may better appreciate the importance of studying carefully each individual case, and of instituting a method of treatment exactly suited to it, for in no pathological condition is the avoidance of routine therapeutics more desirable than in tubercular laryngitis.

All competent observers agree upon the extreme rarity of primary tuberculosis of the larynx. In the majority of instances it is a local manifestation of preexisting tubercular disease in the lungs, or occasionally in other organs contiguous or remote. Before we enter upon the study of the diagnosis and treatment of laryngeal tuberculosis, let me briefly refer to the pathology of the disease. Accepting the theory of Koch that it is due to the invasion of the larynx by the tubercle bacillus in an individual who, by heredity or by environment, is liable to the disease, or whose resisting power has been enfeebled by previous illness—notably of the respiratory tract—we can readily understand how infection may take place; tuberculosis of the lungs being followed by that of the larynx, or, in those rare instances when the latter is the seat of the disease, the secondary involvement of the lungs takes place in a few weeks or months.

In the limited time at my disposal it is impossible to give even an outline of so vast a subject as the morbid anatomy of tuberculosis, so I will content myself with a brief description of the different forms of the disease as seen with the laryngoscope. Many authorities—notably J. Solis Cohen of this city—have drawn attention to a decided anemia as the earliest sign of laryngeal tuberculosis. This we can very readily verify in one of the patients whom I will presently show you. It seems to be an evidence of the general feebleness of the patient. Infiltration is usually the earliest local sign of the disease. It generally begins in the interarytenoid space, in one or both arytenoids, or in the epiglottis, but as Lennox Browne has pointed out, in patients whose profession involves much use of the voice the swelling may first be seen in the vocal cords and ventricular bands. In more advanced cases typical tubercular ulcers are observed. These ulcers are small, superficial, "mouse-nibbled," and as a rule are the result of breaking down of infiltrated areas. They are noticed most frequently on the arytenoids or on the laryngeal face of the epiglottis, and the presence of numerous tubercles on their surfaces indicates their true character.

Turning our attention to the symptoms of the disease, we find that some impairment of the voice is the first noticed. This may vary from a slight hoarseness to a complete aphonia, depending on the site, extent and character of the local lesion. Cough is almost always present, and from its frequency and paroxysmal character causes great prostration. It results from irritation produced by the local lesion, or reflexly from the pulmonary complications. Expectoration, which is slight at first, becomes purulent in advanced cases, especially when the lungs are much involved. Hemorrhages from the larynx are rare in tubercular disease, but occasionally occur after a paroxysm of coughing, which causes a rupture of one or more laryngeal capillaries. Dysphagia is probably the most distressing of all laryngeal symptoms, and if unrelieved causes rapid emaciation and invariably hastens the fatal termination of the case. It is so extremely painful when ulcers have formed on the epiglottis that patients

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*A clinical lecture delivered at St. Agnes' Hospital, June 25, 1898.

who have developed this complication will refuse even the most bland diet rather than undergo the agony which swallowing entails.

In the treatment of laryngeal tuberculosis constitutional measures must not be lost sight of, and every effort should be made to increase the power of resistance of the patient. With this object removal to a dry climate of moderate elevation and equable temperature should be urged. The patient should live in the open air and sunlight as much as possible, and take an abundance of animal food, eggs, milk, and fresh vegetables. Suitable exercises should be insisted on, and when the opportunity occurs massage carefully applied will be found of value in improving the nutrition of the patient. General hygiene should have proper attention—in a word, the sufferer should be placed in the best possible condition to insure the restoration of his health. Certain symptoms not directly referred to the larynx require appropriate treatment. Of these cough, dysphagia, night sweats and diarrhea are the most prominent. Cough can generally be controlled by insufflations of morphine, ¼ grain, with 10 grains of powdered acacia, applied to the larynx with a powder-blower every four or six hours; or, if this is impracticable, the following prescription will be found of service:

℞ Codeinæ sulphatis, gr. iij;
Sodii bromid., gr. 120;
Syrupi Prun. Virginian., f ʒ iv;
Aquæ, q. s. ad f ʒ ij.

Misce et Sig.: A teaspoonful every four hours for cough.

Night sweats are relieved by fifteen-grain doses of camphoric acid taken an hour before bedtime, as recommended by H. A. Hare, or, where insomnia is also present, by ten-grain doses of sulphonal in hot milk about three hours before bedtime. Diarrhea can be checked by careful attention to diet and by ten-drop doses of aromatic sulphuric acid every two or three hours, combined with half a drachm of paregoric if much pain is present. Dysphagia is usually relieved by the local application of cocaine, either in the form of a spray or with a brush, the four-per-cent. solution being a useful strength. Wolfenden's method of feeding—the patient being placed in the Trendelenburg position while he sucks liquid nourishment through a tube—will sometimes be found of service. In extreme cases rectal feeding will have to be employed until the larynx is improved by local treatment sufficiently to allow the passage of food over the epiglottis.

The local treatment of laryngeal tuberculosis has materially improved in recent years, because our knowledge of the pathology and morbid anatomy of the disease has become more accurate, and our therapeutic resources more extensive and rational. Previously all cases were treated locally with caustics in varying strengths, regardless of the condition of the larynx, or of the distress caused to the patient by their application. It was soon recognized, notably by Bosworth, that a soothing method of treatment was indicated, and caustics were abandoned for cleansing sprays followed by anodyne insufflations, resulting in much benefit to the patient.

A distinct advance in laryngeal therapeutics was made when Krause advocated the local use of lactic acid in the treatment of tubercular laryngitis. The patient's larynx having been cleansed by a spray of Dobell's solution, and a four-per-cent. solution of cocaine having been applied to the affected area, the ulcers are thoroughly rubbed every third or fourth day with a solution of lactic acid, varying in strength from twenty per cent. to eighty per cent. The applications are best made with a laryngeal cotton applicator. The improvement is at once manifest, and I have notes of several cases where, by this treatment, the ulcers healed perfectly. Even in cases where the lung involvement was very advanced, it should be advocated, as, although a cure may not be expected, the relief to the patient is usually very great. Herying has recommended curetting the ulcers before the lactic acid is applied in order to remove the necrotic tissue and thus secure a more thorough action of the acid.

Donelan published an article in *The Lancet* (London) in December, 1897, describing a syringe he had specially devised for the submucous injection of minim doses of pure guaiacol into the tubercular infiltrations of the larynx preceding ulceration. He has had marked success in several cases from this mode of treatment, which seems to have the advantage of not producing areas liable to secondary infection from tubercular sputum, as sometimes results when the curette is used. Early tracheotomy has been advocated by some authorities on the ground that absolute rest of the voice is insured, and topical applications are more easily made, but is condemned by others, who deny that these results are obtained in their hands. It is, however, admissible in impending suffocation.

NOTE ON A SIMPLE METHOD OF CURING APHONIA.

By Albert Abrams, A.M., M.D.,
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For the relief of aphonia and dysphonia of laryngitis, no method equals the following: First mark approximately with a pencil on either side of the neck the point in the thyrohyoid membrane where the internal laryngeal branch of the superior laryngeal, the nerve of sensation to the larynx, passes into the latter organ. Over the points marked with the pencil freeze with chloridê of methyl or a spray of rhigolene. Freezing must be thorough. The relief in most instances is almost instantaneous, and phonation, which was before difficult or painful, can be performed with perfect freedom. The relief thus afforded is of signal advantage to many professionals. In some instances the relief is of short duration only, in which cases freezing must be done again or several times.

I have used this relatively painless method for at least six years, and the results in most instances have been phenomenal. This same method may be employed with advantage in neuroses of the larynx, like laryngismus stridulus, spastic aphonia, and in the laryngeal crisis of tabes dorsalis. The use of any therapeutic agent based on empiricism alone will yield clinical results wholly at variance with strict scientific inquiry. I have therefore endeavored by theory and experimentation to evolve the rationale of congelation as a therapeutic agent. The following hypotheses are presented:

1. Freezing may act as a counter-irritant and the results achieved may be due to local or reflex action.

2. Freezing may act by producing physical changes in the underlying structures.

3. It may act as a shock.

The first hypothesis may be contravened in part on the assumption that freezing, unlike counter-irritation, is immediate in its action, of greater potency, and followed by slighter reaction. We know, however, that the application of cold to the superficies of the body induces through the automatism of reflex action contraction of the arterioles, especially in parts subject to inflammation, thus materially inhibiting the process of inflammation. The degree of cold secured by the usual methods of freezing is neither of sufficient intensity nor duration to warrant such a postulate. The reduction of temperature, as I have determined by experiment, is never sufficiently great to firmly sustain the first hypothesis. By *reenforced freezing*,* which I have described elsewhere, a reduction of temperature to the freezing point may be secured.

The second hypothesis may be disposed of by briefly citing the results of certain experiments. If the skin over the large nerves of rabbits is frozen daily and the nerves afterwards examined, no degenerative changes in the latter can be demonstrated, and it is only after freezing is carried to an inordinate degree and repetition, unlike its clinical application, that any degenerative nerve changes can be demonstrated; and this degeneration, I have observed, involves not only the nerves, but likewise the superimposed tissues.

I am inclined to accept the final hypothesis as the most probable, viz., that freezing acts as a shock, inhibiting the nerve functions for a variable period. While conductivity is an expression of physiological nerve activity, pain or disturbed function is an expression of pathological nerve activity. The inhibition of the activity of a pathological nerve expresses the ideal attainment of therapeusis. This is secured remotely by analgesic or directly by local medication. The latter is the more rational method and can be attained by freezing, which, acting like a shock, inhibits the functions of the nerve, thereby putting it in a condition of rest.

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THE VALUE OF SYSTEMATIC PHYSICAL TRAINING IN THE PREVENTION AND CURE OF PULMONARY TUBERCULOSIS.†

By E. Fletcher Ingals, M.D.,
Chicago.

The absence of systematic study by physicians and the very meager literature compels me in this paper to be more or less dogmatic, yet there are numerous recognized facts that seem to justify calling attention to this subject, notwithstanding the absence of careful clinical observations.

One of the most common observations made by medical men is that the long, narrow, flat-chested individual is the one who is most liable to the development of tubercu-

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†Presented to the American Climatological Association, September, 1898.

losis; and we have all observed that in patients presenting this form of chest the chances for recovery are reduced to a minimum. This single observation is sufficient to suggest that systematic physical training, which would develop the respiratory muscles, expand the thoracic walls, and correspondingly increase the pulmonary capacity, would be of great service, not only in preventing tuberculosis, but in curing its early stages.

Pathology teaches that the collapsed air cells furnish a most favorable nidus for the development of the tubercular process; therefore, for prevention of the disease, we should adopt measures to expand the lungs and bring the air cells into the best possible working condition. It is probable that in most cases there is a pretubercular, or at least an early tubercular, localized anemia which, by diminishing the nutrition of the parts, lessens their resisting power and makes them peculiarly susceptible to the malign influences of the tubercle bacilli and the toxins which they produce.

From the wide-spread prevalence of tuberculosis, which is said to affect eighty per cent. of the human family, it is probable that all of us are at times infected by the Koch bacillus, but so long as the general and local resistance is adequate it is harmless, and the disease can make no progress. This hypothesis is supported by the fact that, notwithstanding the large percentage of people affected by tuberculosis, the majority of them recover. Even when the disease attacks the lungs, organs in which the conditions for the spread of the process are peculiarly favorable, it does not prove fatal in more than about twelve per cent., whereas we have good reason to believe that from thirty-five per cent. to forty per cent. of the human family are at one time or another affected by pulmonary tuberculosis. In most of those who recover the disease has made but little progress and it is only at the autopsy, after death from other causes, that its presence is detected. If these views are correct, it is clearly our duty to those whose health and lives are placed in our keeping to recommend measures likely to strengthen the resisting power of all the body tissues, but more especially those of the lungs, because they afford the most favorable conditions for the spread of the disease.

Tuberculosis attacking the skin and the bones is so limited by the natural processes that even at its worst it often extends over many years, and in many cases Nature throws up an efficient barrier about the infected tissues which prevents extension, and ultimately recovery takes place. Similar processes should be encouraged in the lungs. It is now commonly believed that a high altitude affords the best condition for the prevention of pulmonary tuberculosis and for the cure of its early stages. It is probable that in large part this beneficial influence is due to the increased distention of the air vessels, caused by the rarefied atmosphere and by the patient's efforts to more completely fill the lungs. This expansion of the air cells not only empties them of the noxious principles that if left to themselves would develop into a serious disease, but equalizes the pulmonary circulation and removes the localized anemia which may have occurred either as the result of the deficient functional activity of the part, of pressure, or of partial obstruction of the nutritive vessels. As a means, then, of prophylaxis, our first measure should be to teach the patient to breathe deeply; and as a means of curing the early stages of the disease (which amount really to a little more than prophylaxis for the remaining healthy portions of the lungs) the same methods are most important.

It is a matter of surprise, to those who have not given the subject thought, to find how superficially many people breathe and how little they know of this most important physiologic process. It is common to find persons who get quickly out of breath who would not do so if they only knew how to fill the lungs, and when to fill them during exertion. For this reason careful physical training is of the greatest importance, and physicians should see to it that their patrons do not neglect any of the precautions which may give their lungs the best resisting power.

One of the first injunctions we should place upon the patient who has any reason to anticipate the development of pulmonary tuberculosis is that he should expand the lungs thoroughly several times every day. We must also personally inspect his mode of breathing to see that he knows how to carry out our instructions. In order to expand the lungs the patient should be directed to draw in the abdominal walls and take a long, deep breath, while the shoulders are carried gradually backward, and the ribs and sternum elevated as far as possible; he should hold this breath for a few seconds and then blow it out slowly and forcibly through a small opening between the lips. In this way not only the air cells

which can be reached by direct inspiration are inflated, but also those at the apices and along the borders of the lungs, which otherwise might not be distended. One has only to try this method a few times when out of breath after active exercise to ascertain how much more effective it is than the ordinary method of respiration employed by those who have had no physical training. By a few deep respirations such as just described, the healthy individual who has exhausted his breath will find that he can speedily recover it; whereas, by the usual respiratory efforts, he will pant for several minutes before he can obtain relief.

I have referred to the fact that the long, narrow, flat-chested individual is most likely to contract consumption and is least likely to recover from it. The questions arise: First, can systematic physical training cause any considerable change in the form of such a chest? Second, is such training beneficial after disease has actually developed? Without fear of contradiction, the first question may be answered in the affirmative. In the space of a few months such a person may generally be taught to expand the chest two or three inches more than previously, and after the exercise has been kept up for a sufficient length of time the form of the chest will be found greatly improved and the circumference increased very considerably. This, then, may be considered a most important prophylactic measure.

At Amherst College training is directed merely to securing general good health without attempts at feats of agility or even the development of powerful muscles. The records for twenty years show that in 2106 students who had exercise only half an hour four times a week, there was a gain of $1\frac{91}{100}$ inches in chest measurement during their college course. At Bowdoin 200 students with the same amount of work gained an average of $1\frac{78}{100}$ inches in chest measurement in six months. Archibald Maclaren (Physical Education) recommends for harmonious development: First, an introductory course of posturing and light exercise with dumb-bells and bar-bells; second, leaping, horizontal beam, vaulting (bar and horse); third, parallel bars, trapeze, swinging rings, ladders, horizontal bar, the plank, escalading; fourth, climbing the pole (fixed, slanting, and turning), the pair of poles, the rope, rosary and mast. By one hour's daily exercise in this way twelve young men from nineteen to twenty-eight years of age gained $2\frac{78}{100}$ inches chest measurement in eight months, and fifteen young men averaging eighteen years in four and a half months gained $2\frac{48}{100}$ inches chest measurement.* Although the increased chest measurement in these cases may have been partly due to natural growth, the rapid and pronounced development leaves no chance for doubting the effects of exercise, and we may safely answer that physical training may in a comparatively short time cause decided improvement even in the long, narrow, flat chest. These facts should also make us more persistent in our efforts to secure proper respiration in all those who are predisposed to pulmonary disease.

Slightly altering the second question, we ask, When tuberculosis has become established in the lungs, is it possible to check the process or promote recovery by physical development? This I think we may also answer in the affirmative. We know that the disease progresses from the original point of infection through numerous other foci, each commencing and spreading in much the same manner as the original infection; therefore, the more thoroughly the lungs are aerated, the greater resisting power will be acquired by parts still healthy but subject to infection, and the greater chance will Nature have to throw up barriers against the disease. Consumption is a disease of such long duration that in the majority of cases there is a period of several months during which by this means, aided by other measures, we may reasonably expect to check the process, and I may confidently assert that no small part of the credit in favorable cases must be given to pulmonary gymnastics.

It has been asserted that athletes are short-lived and that the majority of them die of pulmonary tuberculosis. Whether this assertion can be substantiated or not is an open question; but even if it is founded upon facts, we must take into consideration the further fact that the majority of professional athletes live very irregular lives, excepting for short periods when they are in training for some special event, and it is more than probable that with them early death or carrying off by consumption must be attributed largely to dissipation.

The examination of statistics from various colleges has shown that non-professional college athletes, in nearly all cases, outlive their expectancy as estimated by the most

*Cheesman: Reference Handbook of the Medical Sciences, vol. ii, p. 759.

careful life insurance companies. Although a considerable number of these amateurs ultimately die of pulmonary tuberculosis, the percentage does not appear to be as large as among men who have had no physical training.

My friend, Dr. Otto T. Freer, who has assisted me in the preparation of this article by a very careful search of the journals and books in the Newberry Library and of such articles as appeared likely to afford any information in the library of the Surgeon-General's office at Washington, was unable to find anything of value bearing upon this subject, excepting in the monograph of Dr. John Ed. Morgan, entitled "University Oars," which was published in 1873. Out of 255 oarsmen who had rowed in the English University boat races, Morgan obtained replies to his letters from 251. These 251 were alive at the close of the year 1869. Thirty-nine old oarsmen had died; of these, seven died of consumption and two of other forms of chest trouble. Morgan says that, generally speaking, these cases were not of that physical vigor that a long boat race requires. One of these men burst a blood-vessel while rowing and died some years after of consumption. Another had consumption so many years after his rowing that there could have been no connection between the two. The next case died twelve years after the race. Morgan remarks that he may perhaps have injured himself. Another oarsman died of consumption four years after the race. Morgan's conclusions are that athletics tend to prevent consumption, but that people of delicate constitution should avoid training, as overexertion may possibly predispose to consumption; his statistics, however, do not appear to justify the latter conclusion.

In the *New York Medical Journal* of July 23, 1898, E. Palier quotes Jageras as stating that consumption is less common among gymnasts than others. Palier himself holds the common opinion that outdoor exercise is a good prophylactic, but does not consider chest development alone sufficient to prevent the disease. He cites the frequency of the disease among laborers and soldiers, but gives no statistics. In this connection I may state that consumption is a common disease among those living on farms, although it is usually supposed that they are more exempt than others. The fact of the matter is that consumption is frequent among all classes, and no one need expect to avoid it by following out any one method of exercise or by any one mode of life.

In "Diseases of Modern Life," Dr. B. W. Richardson inveighs strongly against "training" as done for physical contests and thinks athletes shorten their lives by it. He says nothing about phthisis, but attributes the evil effects of excessive athletics to heart strain. He says: "There is no sign, no evidence anywhere, that the greater culture of the physical strength has favored the longevity of an individual or the vital tenacity of a race." He thinks that excessive physical exercise insures premature decay and early death, and mentions the Jews as an example of a race of not a high physical standard, and of apparent feebleness of body, but he regards them of all civilized races first in vitality. On the contrary, it has been recently stated that the Jews are peculiarly prone to phthisis.

In estimating the good or ill that may result from systematic physical training, it must not be forgotten that the unfavorable statistics have been obtained from a study of professional athletes or at least from amateurs who have trained excessively. It is a well established fact that the firm muscles, the rounded chest and the large respiratory power developed in young men by moderate exercise are seldom lost even after the exercise has been suspended, but continue for many years or even for life with very little subsequent exercise; therefore, the importance to the young of proper physical culture, particularly of the respiratory muscles, cannot be overestimated.

As to the kind of exercise that is best for this purpose, it is probable that that recommended by Maclaren is as good as could be devised for its general effects. Nearly all forms of exercise that take the person out-of-doors, such as horseback riding, tennis, ball-playing, golf, bicycling, rowing, running, etc., seem well suited to improvement of the general health; but the methods that have seemed to me most suitable for continuous practise, and most beneficial for the development of the chest, are by Indian clubs, the rapid use of small dumb-bells, the horizontal bar, the trapeze, and boxing. In all of these the patient of necessity learns to breathe deeply and acquires strength of the respiratory muscles; but most important for our special purpose is the practise of frequent deep inspiration, whereby the lungs are thoroughly filled, and forcible expiration, which inflates the air cells at the apices of the lungs. This should be repeated several times daily. In order to secure regularity in this exercise

it is generally necessary to recommend for our patients some form of simple inhaler that may be carried in the pocket and used at stated intervals throughout the day. At the same time, according to indications, some stimulant or sedative inhalant may be advantageously employed for its effect upon the mucous membranes of the upper air-passages, but more particularly for its influence in securing regular use of the inhaler; for many persons will take some medicine regularly who would soon discontinue systematic inhalations of non-medicated air.

The inhaler that I employ is a simple hard-rubber tube about four inches in length and half an inch in diameter, filled throughout its middle two-fourths with corrugated blotting-paper, and having corks for each end so that it may be closed to carry in the pocket. The medicament is dropped on the blotting-paper and the patient is directed to take long deep inhalations through the inhaler every two hours during the day. After the instrument is freshly charged, the patient inhales but twice, two hours later four times, two hours afterward six, and at the end of the next two hours eight times. The instrument is then to be recharged. The patient is directed to draw in the breath deeply, to hold it for a few seconds and then expire forcibly with the lips nearly closed. There should be felt a sense of smarting or slight discomfort as low as the fourth rib, lasting from three to five minutes, after each inhalation.

The remedies that I employ consist mainly of thymol, menthol, tincture of iodine and formalin in solution of alcohol. Chloroform may be added to any of these to relieve cough. The inhaler is charged with from five to fifteen minims of the solution, according to the duration of the sensations which it causes. The strengths commonly employed are: Thymol, one to two grains to the ounce; menthol, thirty to sixty grains to the ounce; formalin, half drachm to one drachm to the ounce; and tincture of iodine, from two to four drachms to the ounce. Chloroform may be added in any desired proportion. I am satisfied that these inhalations are of signal value in the treatment of laryngitis and tracheitis, because by them the patient may make positive applications to the upper air-passages, which he could not do himself either by sprays or ordinary inhalations.

This method of treatment appears to me also of undoubted value in the prevention and cure of pulmonary tuberculosis, though I do not believe that these or any other inhalants have any direct effect upon the tubercle bacilli; but they may mitigate the catarrhal inflammation of the mucous membrane of the upper air-passages that attends the tubercular process. The chief value of this method undoubtedly results from the deep respiration and consequent distention of the air vesicles and development of the respiratory power which is obtained by its use. Regular, systematic deep breathing cannot be secured with most patients unless some medicament be employed at the time, therefore it is best to use inhalants that cause well marked sensations and of known antiseptic qualities.

36 WASHINGTON STREET.

APOCYNUM CANNABINUM—"*THE VEGETABLE TROCAR.*"

BY T. S. DABNEY, M.D.,
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The publication in your issue of June 15, 1898, of my letter in reference to the use of *Apocynum cannabinum* in dropsical affections has caused me to be inundated with communications from every section of the country. It is utterly out of my power to answer in full these letters, and as my stock of reprints of my original article, published in 1880, is exhausted, I feel impelled to furnish the profession, through your widely circulating journal, a rather complete history of a plant that has been discovered and rediscovered a dozen times—a plant growing wild from Canada to Mexico, from the Atlantic to the Pacific. I am especially impelled to contribute this article to the profession on account of my having had twenty years' experience with the remedy in question—a remedy scarcely mentioned in works on therapeutics and materia medica. Shoemaker devotes six lines to telling nothing about it. The last edition of the U. S. Dispensatory has about ten lines of misinformation about it. It says: "It is powerfully emetic and cathartic, sometimes diuretic, and promotes diaphoresis and expectoration." It neither promotes diaphoresis nor expectoration to any extent. It causes emesis and catharsis only when improperly used. It is the most powerful indirect diuretic known, and herein lies its great value in dropsies; and to its diuretic action alone is due the invigorating effect of this remedy.

Ascitic fluid, as is well known to all medical men, is highly albuminous, hence tapping

a patient is practically equivalent to bleeding him, and the greater the amount of fluid removed the greater the resultant weakness. Dropsical patients literally feed on the albuminoids contained in their closed cavities, and rapidly fail after several tappings. Purgatives act similarly by removing the albumen with the water; but when the ascitic fluid is forced through the renal filtering plant the albumen is halted and thrown back into the circulation, and the water alone is allowed to escape, thereby relieving the dropsy and feeding the patient, who has been slowly bleeding to death into one or more of his closed cavities. Hence it is that patients taking this medicine rapidly gain in strength in spite of its depleting effects. The appetite is usually rendered sharp, and this, coupled with the reabsorption of albumen, accounts for the rapid results so often obtained. It is not uncommon for a patient suffering from general anasarca to pass one or two gallons of urine daily, until the fluid is all removed and the patient resembles a dried herring.

Bartholow, Waring, Hare, Ringer and H. C. Wood make no mention in their works on materia medica of this unquestionably very valuable remedy. The cause for the expurgation of apocynum practically from the materia medica is easily found. Manufacturing chemists, through ignorance, carelessness, or greed, have foisted upon the profession a number of radically different drugs under the name of *Apocynum cannabinum*, hence results obtained by different physicians using different medicines under a common name varied so widely that the drug was eventually discarded altogether. The *Apocynum androsæmifolium*, an utterly worthless weed, is frequently substituted for the *Apocynum cannabinum*, which it very closely resembles in appearance. The leaves of the *Apocynum cannabinum* are single and sessile at the bases of the branches, whereas those of the *Apocynum androsæmifolium* are always in pairs. This is a marked difference, and should serve to readily distinguish one from the other.

Owing to the name of milkweed, by which this plant is widely known, many mistakes are made, for there are a number of totally dissimilar plants called in different parts of the country milkweed—*Asclepias incarnata*, for instance. It is also called dogbane, from its supposed anti-canine properties. Owing to the peculiar way the long slender roots of the plant have of crossing and twisting around each other, the name of "cross root" has been given it by the Catholic Indians of Mississippi, whose simple faith sees the hand of God and the sign of the degradation of His Son in the flora and fauna everywhere. It was under this name of cross root that my attention was first called to it by a country storekeeper. I was told that Indians and negroes claimed it possessed great virtues in dropsy. I bought all the roots my friend had and requested a pharmacist in my neighborhood to make for me a strong tincture—one ounce of the roots making six ounces of the tincture. For three years I conducted experiments with this, to me, totally unknown remedy. The results obtained were so remarkable that Ward 24 in the Charity Hospital was set aside for the exclusive use of patients suffering from dropsical effusions.

At the end of three years of original experiments I was requested by a number of my colleagues to give my results to the profession. This I was willing and anxious to do, but what was the name (botanical) of my *crux radix?* After much trouble and expense, I succeeded in getting several living plants, which were transplanted in my yard, where they remained until they flowered, and then, and not till then, did I realize that I was using *Apocynum cannabinum*. My paper was read before the New Orleans Medical and Surgical Association in December, 1880. The Indians all over this country seem to have been fully informed as to the virtues of this plant.

Dr. Rollin B. Gray, in the *New York Medical Journal*, 1894, vol. lx, claims that in 1820 his grandfather, Judge John Gray, of Chautauqua county, N. Y., acquired a knowledge of its virtues from the Cattaraugus Indians, who called it "Nunquot." The Judge is said to have had great success in treating dropsies. Through Judge Gray the virtues of the apocynum were made known to his sons, Drs. John F. and P. W. Gray, as well as his grandson, Dr. Rollin B. Gray, who used it as early as 1866. Drs. Valentine Mott, John C. Peters and the elder Flint are said to have had very great confidence in this remedy.

Dr. James P. Kimball, Surgeon-major U. S. Army, stationed at Fort Wingate, New Mexico, tells us (*New York Medical Journal*, 1895, vol. lxi) that it is in common use among the Sioux Indians in Dakota and Montana, and among the Cheyennes in Indian Territory. By these Indians it is used almost exclusively for the deadly bite of the rattlesnake. Powdered roots are laid on the point

of entrance of the fangs after the parts have been well scarified, and then an infusion of the roots is given internally. According to Surgeon Kimball he believes the results obtained are admirable. The Indians claim the cure infallible.

Dr. J. H. Lowery, in the *New York Medical Journal*, 1894, vol. lx, sets up a claim of priority in the use of *Apocynum cannabinum* in aortic and mitral disease. He claims to have commenced its use in 1890. In the THERAPEUTIC GAZETTE, 1889, is an excellent article on the use of this remedy in disease of the heart especially. The author, Geo. R. Murray, M.A., M.B. Cant., physician to University College Hospital, England, does me the honor of quoting at some length my article published in 1880. It will be seen that Dr. Lowery cannot substantiate his claim. Mr. Murray claimed that the greatest benefit of the remedy would be derived in cases of aortic regurgitation.

In 1869 Dr. Jewett read a paper before the New York State Medical Society on the use of *Apocynum cannabinum* in removing dropsies, after failure with all known remedies. This paper when published created a pronounced sensation, and the Doctor was soon overwhelmed with letters asking the source of his supply, etc., the writers invariably claiming that no such results as those given in Dr. Jewett's paper were obtainable from the *Apocynum cannabinum* of the shops. Dr. Jewett was fortunately able to furnish to all correspondents a limited quantity of the roots, which grew in abundance near his home in Canandaigua county, and soon the journals were filled with the praise of this remedy, so aptly termed by Rush "the vegetable trocar."

On May 18, 1875, Dr. Hutchins reported before the Medical Society of the County of Kings, N. Y., a case of general anasarca treated with *Apocynum cannabinum* obtained from three leading New York pharmacies, the result being *nil*. Within forty-eight hours after the patient had been put on the genuine drug furnished by Dr. Jewett, every vestige of water had disappeared. Under date of February 16, 1875, Dr. Jewett wrote: "An experience of thirty years in its use has given me unbounded confidence, if properly used."

Dr. Mark Andrews, of Waterproof, La., states in the *Medical Brief* for August, 1898, that he has used apocynum successfully for forty years. I can add that twenty years' experience in its use has given me absolute confidence in my ability to entirely discard the use of the trocar whenever a tincture, fluid extract or infusion of the *bark* of the *root* of the genuine *Apocynum cannabinum* can be obtained.

In 1826 Dr. M. L. Knapp published in the *American Medical Review and Journal* an article on the valuable diuretic properties of this herb. He was followed in 1833 by Dr. John H. Griscom, of New York, who published in the *American Journal of Medical Sciences* a very elaborate article on the same lines laid down by Dr. Knapp. At that early date commercial rivalry was not so keen as now, and besides most physicians prepared their own infusions and tinctures from herbs and roots, whose purity they could personally vouch for.

Is it not a shame that so valuable a remedy as *Apocynum cannabinum* has become almost unknown, on account of the unscrupulousness of our manufacturing pharmacists, who do not hesitate to foist upon us, in and out of season, a vast array of their own synthetic products? Will not some great house undertake a careful study of the true and the spurious Apocynaceæ and then furnish the profession with a tincture, a fluid extract, solid extract, and possibly the two alkaloids, apocynin and apocynein, that have so far been separated and recognized? These preparations must be of uniform strength. Cascara sagrada, that most valuable of all remedies in certain forms of constipation, would have shared a fate similar to that of *Apocynum cannabinum* but for a certain Western firm that always insisted upon using the bark of the *Rhamnus Purshiana* itself and never any substitute. Cannot this firm, that has furnished so many absolutely reliable products, undertake the manufacture of a fluid extract of *Apocynum cannabinum*? If so, the profession can rely upon its purity and its unvarying physiological results.*

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*The following is part of a letter on this subject recently received by the author from Parke, Davis & Co., of Detroit, Michigan: "We are pleased to inform you that we have had on the market for a considerable time past a fluid extract of the genuine *Apocynum cannabinum* Lin. We enclose you herewith one of our labels, which will doubtless be of interest to you. Being perfectly aware that the collectors of *A. cannabinum* are very likely to supply *A. androsæmifolium*, we took particular pains some time ago to correspond with the very upright and reliable collectors whom we employ for the collection of this drug. We called their particular attention to the chances of confusion, and requested from them a distinct and categorical statement as to the genuineness of the supplies which we receive from them. In response we were assured that they were properly informed in the premises; that they were taking the utmost pains to avoid confusion of supplies; and that we

One of the most interesting and scholarly papers that has appeared lately upon the subject under discussion is from the pen of Dr. A. A. Woodhull, Colonel U. S. Army, stationed at Denver. On December 11, 1897, Dr. Woodhull contributed to the *British Medical Journal* an article on Apocynum. The eleven cases cited by him show clearly the characteristic action of the drug and its wide range, and I have not hesitated to avail myself of the valuable information in the Doctor's paper in this article. Indeed, I acknowledge now that I have unhesitatingly made use of all obtainable information on this subject. My main object in compiling such a long article and citing the names of so many physicians who have written on the same subject is to induce authors of books on materia medica, therapeutics and dispensatories to give this remedy its deserved recognition. My second object has been to induce some responsible manufacturing chemist to place a reliable preparation on the market.

Though many cases of general and local dropsies have come under my care within the past few years, I prefer to cite the first sixteen cases treated by me in the Charity Hospital of New Orleans, as these cases are of public record, and as they clearly illustrate the wide range of usefulness of the remedy under discussion. They are taken from a reprint of a paper read before the New Orleans Medical and Surgical Association, December, 1880.*

CASES I AND II.—In March, 1878, in Wards 23 and 26 (Prof. J. B. Elliott's) I commenced using tinctura apocyni cannabini in ten-drop doses on two patients suffering from general anasarca due to Bright's disease. The patient in Ward 23 had been tapped many times. The usual diuretics and cathartics had been faithfully tried in both cases without any perceptible benefit. The stomach of the patient in Ward 23 became so irritable after taking the medicine two days that it had to be discontinued. A marked improvement, however, occurred in him, and he was able to leave his bed and return home. I have not since heard of him. The patient in Ward 26 was entirely relieved in five days of all dropsy, and left the hospital believing his troubles over. He has not since been heard from.

CASE III.—George B., of Mississippi, was admitted to Ward 25 October 23, 1879. Patient was about twenty years of age, and presented that peculiar white appearance almost pathognomonic of chronic Bright's disease. The urine was heavily charged with albumen, and casts in abundance were found to be present. In November I took charge of the case, though I saw no hopes of any ultimate good. General anasarca was found. Patient did not pass more than six or eight ounces of urine a day. Professor Elliott informed me that the usual cathartic and diuretic remedies had been tried in vain.

Patient commenced taking gtt. xx of tr. apocyni cannabini, and in a few days gtt. xxx were administered. The urine soon became abundant, a quart or more being passed daily. Fifteen or twenty watery discharges daily were passed from the bowels. In a few days the edema of face, arms, legs and feet disappeared; a small amount of ascites alone remained. Examination of the urine showed no diminution in quantity of albumen or casts. The dropsy never returned, though the patient's stomach refused to tolerate the drug after an emetic dose of it had been administered. On December 26, 1879, the patient was discharged. I learned subsequently that he died soon after reaching his home.

CASE IV.—Albuminuria, due to cirrhosis of liver. Joseph McC., aged forty-four, native of Louisiana, was admitted to Ward 25, in November, 1879. Urine scanty and highly colored; filled with albumen. No casts. Ascites and edema of legs to enormous extent were present. Gtt. xx of the apocynum cannabinum were administered at once. A marked improvement was visible next day. In ten days no trace of dropsy could be found. The albumen persisted, but no casts were ever found. In about ten days more every trace of albumen disappeared, but it made its reappearance in small quantities in about five days. The urine became very abundant. His bowels acted freely. The medicine was discontinued on four separate occasions, and with the invariable result of the reaccumulation of the dropsy. In every instance the dropsy was entirely removed in four days. Patient was discharged in December, with no dropsy and no albumen.

could depend upon the genuineness of the drug furnished us. Not content with this assurance from our collectors, we of course compel every shipment of *Apocynum cannabinum* to run the gauntlet of our drug experts and of our botanist before it is accepted and manufactured into fluid extract. Under the circumstances we feel that we have done our whole duty and have observed every possible precaution with a view of guaranteeing the therapeutic efficacy of our fluid extract."

*For most of my notes I am indebted to Dr. David Barrow and Mr. D. H. Tucker (now Dr. Tucker), resident student Charity Hospital.

On February 25, 1880, he returned as dropsical as ever. On March 1, 1880, all anasarca had disappeared. The apocynum cannabinum was suspended on March 1, and patient was put on liquor potassii arsenitis gtt. v ter die. On March 9, no trace of dropsy or albumen being present, the patient was discharged. I was informed by some of his friends a short time ago that he has never had any recurrence of his trouble.

CASE V.—Wm. W., aged twenty-nine, native of Alabama, farmer, was admitted to Ward 22, January 23, 1880. Patient had lived in the Louisiana swamps for many years. His constitution was shattered by malarial fevers. His spleen was found to extend beyond the median line. On admission the patient presented general anasarca; great puffiness under the eyes; a pale, anemic appearance. From four to five ounces of urine were passed a day. Pulse was hard, showing thickness of arterial coats, but it was very weak. Patient stated that several years before he had caught a severe cold, which was followed by acute pain in the loins, and dropsy. The urine was found to be full of albumen and casts. Patient complained incessantly of pain in his head and loins. This being a well marked case of chronic Bright's disease, I determined to take copious notes.

January 24. Patient was put on tr. apocyni cannabini, gtt. xx ter die, and liquor potassii arsenitis gtt. v, cinchonidia sulphate gr. v, ter die. January 25, no change was observable, except three watery passages during the night. January 26, urine very copious, catharsis moderate. Patient says he feels greatly improved. The ascites, which was enormous, is considerably reduced.

January 27. Marked diminution in size; diaphoresis and diuresis most copious. Bowels only acted twice during twenty-four hours. Pain in loins greatly reduced; continues in his head. January 28, patient passed several quarts of urine in the past twenty-four hours; two passages from bowels. Reduction continues; no pain in back, little in head; appetite voracious. Patient steadily gaining strength.

January 29. One passage; urine very free. To-day the arsenic and cinchonidia were discontinued. On the 28th the medicine was vomited by patient; since then ten drops, thrice daily, have been taken. Complains of heartburn and pain in head and loins. Urine little above normal in quantity; skin dry and cold; three passages in twenty-four hours.

February 1. Complains of skin having been hot and dry last night; intense pain in head and loins.

February 2. Urine copious; three passages; patient feels well. The patient not having had a trace of dropsy for many days, his urine being nearly free of albumen and but few casts being found, his appetite being excellent and his general health being good, he was this day, at his urgent request, discharged.

On May 11, 1880, the patient returned and was sent to Ward 24. General anasarca, loss of appetite and general debility brought the patient again under my care. Albumen and casts were found as abundant as upon his first admission. Patient passed not more than five ounces of urine during twenty-four hours; skin was dry and bowels constipated.

May 12. Patient was given his old prescription of tinctura apocyni gtt. xx ter die, and in addition one dose of forty grains of compound powder of jalap.

May 13. Twenty-five watery passages during past twenty-four hours; urine improved; skin moist; no appetite. Patient continued to have on an average twenty-four operations a day to the 17th, when the medicine was discontinued for twelve hours. On this day but little dropsy was present; urine normal and appetite good.

June 24. Patient left without my consent. When he left his urine contained but little albumen, but plenty of casts. The patient was strong and vigorous looking.

July 24. Patient returned to Ward 24 in same condition as before. The apocynum cannabinum soon removed all dropsy and caused the skin and kidneys to act well.

October 22. The patient has had no return of dropsy for two months. His urine is steadily improving; some days a mere trace of albumen can be found, on other days it is quite abundant; all casts have disappeared. Patient takes gtt. v of the tincture of apocynum once a day.

CASE VI.—Mitral regurgitation of the heart. Thos. D., aged eighty, negro, was admitted to Ward 32, March 15, 1880. Twenty drops of the tincture were ordered three times a day. The medicine was discontinued after three days, as no results, either good or bad, were obtained. As the medicine did not act as a tonic, diuretic, diaphoretic, or cathartic, my opinion was that either the nurse failed to give the medicine or else the patient did not swallow it.

CASE VII.—Acute desquamative nephritis.

Charles T., laborer, aged thirty-five, was admitted to Ward 26, April 9, 1880. Puffy under eyes; great ascites; edema of feet and legs; urine abounding in albumen, epithelial casts, and fat globules. Ordered a turpentine stupe, free saline catharsis and tincture of digitalis. In a few days tr. apocyni cannabini was substituted for the tincture digitalis. Only one dose of sulphate of magnesium was given, and the turpentine stupe was removed as soon as it had reddened the parts slightly. The dropsy disappeared in a few days. In ten days every trace of albumen, casts and fat globules had disappeared. The nephritis in this case seems to have been due to great exposure to cold and dampness.

April 22, 1880. The patient was discharged strong and vigorous. He seemed cured. No tidings of him since.

Case VIII.—Subacute nephritis. Patrick C., nurse in Ward 24 for a long time. He is still the nurse there. Patrick is sixty years of age. On April 16 he presented the following appearance: Enormous general anasarca of some months' standing. Urine loaded with albumen and casts and very scanty in amount. Suffered greatly from dyspnea. On the 16th he was put on tr. apocyni cannabini gtt. xx ter die. April 17, 18, 19 and 20, urine steadily increased in quantity, and diminished in albumen. Dyspnea relieved and appetite restored. Dropsy greatly reduced. On May 4 no trace of dropsy, albumen or casts was found, on a careful examination. I forgot to state that the attending physician prior to me had tried in vain to relieve the dropsy by means of compound jalap powder.

Since May 24 up to date (October 24) the patient has continued well. I believe him radically cured. Patient took gtt. v of the apocynum for a month after all signs of disease had disappeared.

Case IX.—Chronic tubal nephritis. Harry A., aged twenty-eight; paperhanger. Admitted to Ward 24, April 16, 1880. Patient passed one pint of urine daily, thirty-five per cent. albumen, casts abundant. General anasarca present.

April 17 he was put on apocynum, gtt. xx ter die. April 18, no improvement. April 19, slight improvement. April 20, 21, 22, 30, marked but gradual improvement. May 4, no dropsy, casts, or albumen. May 8, a faint trace of albumen; no casts. May 10, slight trace of albumen. Patient steadily gained in looks and strength from the first few days. May 11, patient left, against my judgment, believing himself cured.

The patient was readmitted to the same ward on September 16, 1880. On admission he was suffering from general anasarca and anemia. Patient only passed about half a pint of urine in twenty-four hours. Urine loaded with albumen; casts abundant. Patient suffered greatly from nausea, cephalalgia, and other uremic symptoms. Old treatment was at once instituted; in addition, infusion of juniper and bitartrate of potassium was given occasionally. In a few days patient's urine became notably increased and uremic symptoms disappeared. The dropsy has gradually diminished, but is still not entirely removed. The albumen and casts have not diminished much up to date (October 29).

Case X.—Enormous ascites due to cirrhosis of liver. No edema in upper or lower extremities. J. H. D., aged forty-two, farmer, was admitted to Ward 24, bed 359, May 11, 1880. Neither casts nor albumen were found in the urine. Patient was at once put on the apocynum. An occasional dose of compound jalap powder was administered. The patient upon admission stated that he had been confined to bed for several months by extreme debility. The ascites gradually disappeared. June 15, no ascites, patient was strong enough to walk about, having evidently gained greatly in flesh and strength since his admission. August 1, patient had a profuse hemorrhage, and sunk at once into a state of coma, and died the next day.

Case XI.—Aneurism of ascending part of aorta. Carl W., aged fifty-six; came from Pensacola, and was admitted to Ward 24 on May 13, 1880. Upon admission patient was suffering greatly from dyspnea. He said he had "asthma," and had been treated for it in vain. His hydrothorax being excessive prevented my making a positive diagnosis at once; edema of legs and feet was quite marked also. Upon admission patient was unable to sleep without great uneasiness; appetite was bad. Tr. apocyni was administered in the usual dose; occasionally a jalap powder was given.

I forgot to state that the apex beat of the heart was one and a half inches to the left of the left nipple. It was also much higher up than normal. Hydrothorax of right side was greater than that of the left side. May 19, no dyspnea. Patient enjoys sleep and food. But little edema of lower extremities; hydrothorax much improved. May 29, all

dropsy gone; both lungs filled well; apex beat of heart in its normal place. Patient's appetite became voracious. He stated that his sexual passions were greatly excited. June 2, patient was discharged, having gained in flesh and strength greatly.

CASE XII.—Mitral regurgitation. George C., aged forty-six, sailor, from Algiers, La., was admitted to Ward 24, bed 362, May 30, 1880. As soon as I saw the patient I advised him to go home to his family. I was satisfied after my examination that a few months or weeks would put an end to his suffering. As the patient insisted on being admitted, I ordered tincture of digitalis. Next day I ordered the tincture of apocynum and compound jalap powders. June 3, patient's stomach was too weak for either food or medicine—great dyspnea and anorexia. June 5, fifteen drops of digitalis was ordered three times a day. June 6, stomach being settled, the apocynum in ten-drop doses was again ordered; 7th, 8th, 9th, 10th, considerable improvement; dyspnea all gone. For the first time for weeks the patient was able to sleep lying down; 11th, 12th, dropsy disappearing quite rapidly, but the irritable stomach prevents pushing the remedy.

June 13. Acute inflammatory rheumatism set in. The apocynum was discontinued, and salicylic acid in large doses substituted. June 18, rheumatism greatly improved. No reaccumulation of water since the apocynum was discontinued. Patient sleeps and eats well. July 24, patient left, having a trace of edema in the feet and legs only. I heard he died a few weeks afterwards.

CASE XIII.—Mitral obstruction. Willie, aged seven; transferred from Ward 18 to Ward 24 on June 8, 1880. Upon admission patient could scarcely breathe on account of the enormous ascites; edema of lower extremities great. Deeming the patient past all hope, I hesitated in prescribing. I, however, ordered one dose of five drops of the apocynum. Next morning the little boy died.

CASE XIV.—Mitral regurgitation. Wm. G., aged forty-five; admitted to Ward 16 on May 3, transferred to Ward 24 June 8. Great ascites and edema of lower extremities; dyspnea so great as to prevent the recumbent posture; patient had not lain down for three months. June 19, patient was discharged, free from all dropsy and feeling in fine spirits. A few pills of elaterium were administered during the first few days. The apocynum was used throughout. Patient was recommended to take five drops of the tincture of apocynum three times a day to regulate the heart's action, and to prevent the reaccumulation of the dropsy. He did not follow my advice, so he was readmitted to Ward 24 on October 22, 1880. Since his readmission up to date (October 30) I have not used apocynum, but have kept him on elaterium and compound jalap powders. To-day the dropsy shows but little diminution, although the remedies produce free catharsis. In a few days I will try the apocynum, and I feel sure he will be entirely relieved in a few days.

CASE XV.—Christian W., aged thirty; Swiss; cook; diagnosis, chronic nephritis. Patient had been in the Charity Hospital before; also in the Nashville Hospital. His attending physicians in both institutions pronounced his case one of chronic Bright's disease. Patient was admitted to Ward 24, bed 352, June 30, 1880. Upon admission he was suffering from general anasarca; albumen and casts in abundance were found in his urine; urine scant. Ordered apocynum three times a day; also an occasional jalap powder. July 16, no anasarca; urine much increased, but casts and albumen still present. Patient's general health apparently fine; complains of erethism. July 23, no reaccumulation; urine not examined for albumen or casts since the 16th. Patient left unexpectedly to go to work. A friend of his informed me a few days ago that he continues well.

CASE XVI.—Chronic nephritis, accompanied by great anasarca. E. W. T., aged thirty-five, native of New Orleans, clerk, was admitted July 27 to Ward 24, bed 357. Urine contained forty per cent. albumen; specific gravity 1014. Under microscope granular, epithelial and hyaline casts were found in abundance; about twelve ounces of urine passed in twenty-four hours.

October 30. Patient's urine very copious; several quarts during the day; only a trace of albumen present; casts difficult to find; a slight ascites still persists. Within the past few days infusion of juniper and bitartrate of potash have been used as adjuvants to the apocynum, which has been used from the beginning; occasional doses of jalap were administered. The patient is still under treatment.

It will be evident to all from the above cases that in the removal of dropsical effusions I have not confined myself to any one remedy, but that I place the apocynum far above all other hydragogues, especially

in Bright's disease. I have not pretended to state that the apocynum exercises any specific action in Bright's disease, but it is worthy of notice that in almost every instance where it was administered in that affection marked diminution of albumen and casts occurred; and in some instances every trace of both disappeared. Whether or not this remedy exerts any peculiar influence over Bright's disease, clinical facts do not allow us to state positively. The following advantages, however, possessed by the apocynum should commend it to all physicians:

1. The small quantity necessary to produce free diuresis, emesis, or catharsis.

2. Its pleasant, aromatic taste.

3. Its fine tonic properties, which compensate for the depression consequent on free catharsis.

4. Its harmlessness—an overdose being speedily followed by free emesis.

With this remedy at our command, I conscientiously believe paracentesis to be, in most cases, unnecessary.

Physiological Action.—Dr. J. Rose Bradford has conducted a series of experiments to ascertain the physiological action of apocynum. Its principal action has been found to be on the heart. The heart of the dog was slowed down to two beats to one respiration, and even as low as three beats to two respirations. It will thus be seen that it is far more powerful than digitalis. No such results have ever been obtained experimentally from the use of digitalis, for the vagus becomes paralyzed before this point is reached. Apocynum strengthens the heart and increases its tone, so that it stops the heart of the frog in systole. In mammals the heart is stopped in diastole, though a massive dose may stop it in systole. Clinically it has been found to regulate in a marked manner the action of the irregular heart, but it *does not* slow the normal heart. It will be seen that it very closely resembles the action of strophanthus—itself one of the Apocynaceæ—digitalis, adonidin, caffeine, and sparteine, but it is the most powerful of the group. Its action on the arteries differs from that of digitalis, as is shown by changes in the blood-pressure. It causes no contraction of the arteries, hence no increase in blood-pressure. It therefore resembles strophanthus rather than digitalis in this respect.

Experiments carried on by Dr. Ringer, in University College Hospital, Cambridge, England, and quoted by Mr. Murray, substantially confirm the above. Dr. Sokoloff's investigations into the biological action of this drug, made in the clinical laboratory of Prof. S. P. Botkin, St. Petersburg, showed slowing of heart's action, enlargement of pulse wave, and *marked rise of blood-pressure.* It is not stated whether Dr. Sokoloff's experiments were made with the heart in a physiological or pathological state. Dr. Ringer's experiments were all conducted in the hospital and on patients suffering from cardiac disease.

According to experiments conducted by Petteruti and Somma (*Il Policlinico*, Nos. 10 to 14, May to July, 1894), far different results were obtained when the decoction was used instead of the tincture. The decoction seemed to act mainly on the stomach and intestines, promoting catharsis and emesis. When emeto-cathartic action was delayed, decided action on heart was noted and a resultant increased diuresis and acceleration of heart beat. The tincture was found to be free from gastro-intestinal irritant effects even when given in large doses.

Apocynein being soluble in boiling water and insoluble in dilute alcohol probably accounts for the nauseating effect of the decoction. Apocynin, on the other hand, is insoluble in boiling water, but soluble in alcohol. These authors claim: "A marked effect of the tincture is the production of diuresis, which is never accompanied with albuminuria; when albumen has been present, it has disappeared after a course of the tincture." This statement but confirms the same point made in my paper published in 1880.

It will be seen, then, that the two alkaloids isolated in 1883 by Schmiedeberg have different properties. It can now be stated as a fact that apocynum acts as a diuretic through its cardio-kinetic action and not by irritation of renal epithelium—a view claimed in my original paper.

THE USE OF SERUM-THERAPY IN POISONING BY MUSHROOMS.

La Presse Médicale of June 22, 1898, records the use by CLAISSE of serum-therapy in mushroom poisoning. He points out that the subcutaneous injection, as in ordinary hypodermoclysis, does much to relieve the characteristic symptoms of collapse or nausea, particularly if they are choleraic in type. In pressing cases intravenous injections may be given with advantage.

The Therapeutic Gazette

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Leading Articles.

THE OPERATIVE TREATMENT OF INTESTINAL PERFORATION IN TYPHOID FEVER.

This subject is one which interests the physician and the surgeon to an equal degree and deserves careful study by both, since in some cases life can be saved by prompt action.

There are no more interesting studies in medicine and surgery than those advances which meet conditions heretofore considered beyond relief, and there are few conditions more terrifying to the physician and to the patient's friends than perforation of the bowel in typhoid fever. Theoretically, at least, it would seem that with the progress which has been made in abdominal surgery operative interference is beyond all doubt the chief possibility for the recovery of the patient, yet as a rule both physicians and surgeons have in the past felt timid about resorting to so grave a surgical procedure in the face of the profound exhaustion of the patient from disease. In this connection the statistics which have been recently collected and published by Keen give us clearer ideas of our duty under these circumstances than any others with which we are acquainted. One of the first points impressed upon us by these statistics is that delay is an exceedingly dangerous thing. Thus, as Keen points out, of the sixty patients operated on for perforation in typhoid fever, 26.7 per cent. recovered when the operation was done within twelve hours; whereas the mortality was total when as long as twenty-four hours had elapsed, except in three instances, in one of which the operation was done twenty-six hours after perforation and the other two between two and three days. As a result of these statistics Keen enunciates the law that if operation is not done within about twenty-four hours after the perforation there is practically no hope of recovery.

It is stated in *La Presse Médicale* of May 18, 1898, that Guecehewitsch and Wanach have recorded five instances in which Russian surgeons have operated for intestinal perforation. In 1891 Netschaieff and Troianoff operated upon a man aged thirty-one years, who presented signs of perforation. The operation was practised six hours after the entrance of the patient into the hospital. Marked evidences of serous peritonitis were found and fecal matter was in the peritoneal cavity. Resection of the perforated portion was performed. Death followed and autopsy revealed typhoid ulcers in the ileum. In 1893 the same authors operated upon a man of twenty-eight years, who presented similar symptoms. On entering the hospital a diagnosis of the ambulatory form of typhoid fever was made, with intestinal perforation. The operation took place seventeen hours after entrance. A general sero-purulent peritonitis was found, the fluid being filled with fibrinous flakes. Quite a large perforation was present; four centimeters of the intestine was excised. The abdominal wall was not immediately sutured, but the opening in it was packed with sterile gauze, and complete recovery followed.

A third case was that of Kohltzoff and occurred in a man of twenty-four years who had typhoid fever and congestion of the lungs. He had symptoms of perforation with excessive fever. The operation was performed four hours after the perforation. Sero-sanguinolent fluid was found in the peritoneal cavity, and twenty centimeters from the ileocæcal valve there was a perforation. A resection of the perforated portion of the intestine was performed. Death occurred in two days. At the autopsy nu-

merous typhoid ulcers were found near the point of ulceration.

In the fourth case, belonging to Troianoff, a patient twenty-nine years of age had been sick for fifteen days with fever. He was seized with violent pain in the belly followed by intense chills, vomiting, and hiccough. There was abdominal swelling and general pain. The symptoms were those of perforative peritonitis. The operation began sixteen hours after the accident. Abundant seropurulent fluid was found in the abdominal cavity and perforation of the intestine had occurred ten centimeters from the ileocæcal valve. Resection of the perforated segment was performed and death occurred fourteen hours afterwards. The autopsy revealed typhoid ulcers in the ileum.

In addition to these cases Guecehewitsch and Wanach report five more. The first of these was a man thirty-six years of age, who had had typhoid fever fifteen days. After eight days he had had bloody stools, violent pain in the belly followed by intense chills, vomiting, and hiccough. The belly was swollen and the pain was general. The pulse was 120, the temperature febrile. An operation was performed two hours after the perforation. On exploring the intestines two perforations were found, one two centimeters in diameter, the other much smaller. Twenty centimeters of the intestine was resected, and death followed in about two hours. At the autopsy ten ounces of fetid pus was found in the belly. The parietal and visceral peritoneum were covered with punctiform hemorrhages. The part of the intestine resected was thirty-seven centimeters from the cæcum. Their second case was a man of twenty-four years who had been ill some time with typical typhoid fever. Seven days after entrance into the hospital he was seized with violent chills and fever, and all the symptoms of perforative peritonitis. The operation was done seventeen hours after the accident, ether being given after a preliminary injection of cocaine. Perforation of the intestine was found. The mesenteric glands were enlarged and were adherent to the intestine in places. Thirty centimeters of the intestine was resected. Death occurred in six hours after the operation. The autopsy revealed profound typhoid ulceration at the lower extremity of the ileum. There were also signs of catarrhal pneumonia. The third case was in a young man of nineteen, who had been sick five days. His fever was high and he had bloody stools. Four weeks after his entrance into the hospital he had perforation of the intestine. His condition remained grave, and on opening the peritoneal cavity it was found to be filled with bloody fluid and there were intestinal adhesions. Death occurred in three days. Again the autopsy revealed perforation and ulceration. A man of twenty-seven presented mild symptoms of typhoid fever. Six days after his entrance he was seized with violent pain in the belly and with chills and sweating. There was also meteorism. Twenty-four hours after these symptoms the operation was performed. Again the belly was found filled with seropurulent fluid. Thirty centimeters of the intestine was removed and contained four ulcers. Notwithstanding injections of saline solution the patient died eight hours after operation. Again the autopsy confirmed the diagnosis. In the fifth case a man of twenty-nine entered on the seventh day of typhoid fever; six days later violent pain in the cæcal region came on with moderate fever. Surgical intervention took place thirteen hours after the accident. The abdominal cavity was filled with serous fluid. The walls of the intestine were edematous. Resection was performed. Death occurred in three days. The autopsy revealed the characteristic lesions and pneumonia of both bases of the lungs. Altogether these authors quote seventy-one instances of perforation in the course of typhoid fever, with seventeen recoveries. The number of deaths in operation for perforative peritonitis in typhoid is necessarily high.

In regard to the time for intervention it is evident that much depends upon the promptness with which the surgeon proceeds to the relief of his patient, and it would seem that good results are apt to follow only in those cases in which the intervention is immediate or where Nature has protected the peritoneum by inflammatory exudations which cause a limited peritonitis. In regard to the anesthetics which may be used in these cases, these two Russian surgeons believe that either chloroform or ether is satisfactory, provided the myocardium, the lungs, the kidneys, the liver, are in fair condition. In other instances they think that mixed anesthesia is well. They produce local anesthesia by cocaine and find that smaller doses of chloroform and ether are needed under these circumstances. Washing out of the peritoneal cavity in these cases is of the greatest possible importance, normal saline solution being employed.

THYROID THERAPY.

It is not our intention in this editorial to discuss the good effects in myxedema and cretinism which follow the use of thyroid gland, but rather to consider the physiological action of the remedy in order to make its use less empirical and more rational. However certain may be the results obtained in disease by remedies of a given type, it is always necessary to determine more or less rapidly the exact method of their action, and when this is done it is sometimes found that they possess properties of still greater power in maladies in which heretofore they have not been tried.

In this connection a summary recently prepared by Robert Hutchinson and published in the *British Medical Journal* of July 16, 1898, is of interest, for his paper embodies a digest of what has been learned experimentally in connection with the effects of the thyroid. It has been found by a number of investigators that the use of this gland internally greatly increases the elimination of nitrogen, or in other words, that it hastens tissue waste in the proteid portions of the body, as for example the muscles. It is also a fact that under its effects a greater amount of oxygen is taken in and a somewhat less, but still increased, quantity of CO_2 given out. Which indicates that the gland causes a greater combustion of body fat, since the loss of body weight is greater than can be accounted for by the increased elimination of nitrogen. In other words, under the effect of the thyroid there is an increased rapidity of combustion throughout the body, while the increased urinary flow which follows its use decreases the patient's weight considerably as well. These scientific facts bring us face to face with the important question as to the real value of the thyroid in the treatment of obesity, for if it would decrease the patient's weight by eliminating fluid and burning up fat, and not at the same time cause the breaking down of muscular tissue, its value as an antifat preparation would be very great. This, however, is not the case, as we have already pointed out, and the practical lesson to be learned is that when treating obese patients by this remedy we should give them an increased amount of proteid foodstuffs to compensate for the nitrogenous breakdown associated with the loss of fat.

Another important effect of the thyroid gland is to hasten cell activity. Under its influence the life history of a cell is carried quickly to its completion, and this may be one of the ways in which it does good in those diseases, like myxedema and cretinism, in which cell life is so slow that the cells never reach maturity in all its completeness.

Not only does this gland exercise the effects already named, but it also seems to prevent the body from utilizing all the fat-forming material which may be ingested. Thus if glucose is given in the dose of 100 grammes to a healthy man, it will not cause glycosuria, whereas if thyroid gland is given this amount of glucose cannot be used by the economy and glycosuria takes place (Bettmann). Upon the circulation the effect of thyroid gland is interesting. The blood-pressure is not directly influenced by it through the vasomotor apparatus, the slight fall which sometimes ensues being due to a depression of the activity of the heart. Upon the blood the effects vary. If the patient be in health the use of moderate amounts of thyroid gland produces no effect; if it is given in excess the blood cells are destroyed; but if it is given to a myxedematous patient the cells are greatly increased.

The process of its elimination, when thyroid is given, is slow.

IRON AND OPIUM IN BRIGHT'S DISEASE.

These two drugs have been highly lauded by many writers in the treatment of patients suffering from Bright's disease, and it has been common for physicians to be carried away by empiricism to such an extent as to administer iron to all cases of Bright's disease, whether the condition of the blood indicated marked anemia or not. Further than this, iron has been given in quantities so large that even the healthy emunctories of the normal individual would be unable to handle it, not to speak of the impaired vital processes of one whose system is undermined by chronic nephritis. It has seemed as if in the wild desire to find something to relieve an incurable disease physicians had come to pour into their patients Basham's mixture, for example, because they could think of nothing else to administer.

In this connection an interesting article has recently been published by Dr. James Tyson, of Philadelphia, in the *Journal of the American Medical Association*, in which he well points out that iron has no specific curative effect in Bright's disease, and furthermore that it is often harmful by locking up secre-

tion and checking elimination. He even goes so far as to tell us that Basham's mixture, or iron in any form, may in his opinion even precipitate uremic symptoms. He also enunciates the view that iron is contraindicated in all cases of acute Bright's disease, and that chronic interstitial nephritis is a malady in which the remedy in the vast majority of cases does harm rather than good. There is only one form of Bright's disease in which iron can be administered, namely, chronic parenchymatous nephritis, and even here it is to be administered with caution and small doses are to be given rather than large ones. Whenever the iron appears in the stools, showing that a considerable portion of it is unabsorbed, it is doing no good and probably harm, and the dose should be cut down or the remedy entirely withheld.

In regard to the question whether Basham's mixture is actually a diuretic, Tyson lends the weight of his opinion towards the side that indicates that this is an error. Indeed, he thinks that the bulk of water which is sometimes taken in Basham's mixture aids in the diuresis more than the iron which it contains, or at least the other ingredients increase the urinary flow.

These opinions, we may state, are entirely in accord with our own. We have never seen any rational statement as to why Basham's mixture should be poured into the throats of patients suffering from renal disease in the universal manner in which it is given, and we would urge upon practitioners the necessity of limiting its administration to that class of patients who seem to have comparatively slight renal lesions with an anemia which is out of proportion in its severity to the kidney trouble.

In regard to the use of opium in renal disease it may be stated that we here come in contact with a method of treatment which is not so commonly resorted to as is the use of iron, and yet which physicians largely employ, probably as the result of the high praise accorded to the action of opium in the treatment of uremia by the late Dr. Loomis, but, as Tyson points out, Loomis' views on this question have been much misrepresented, as may be seen on reading the item in the Progress columns dealing with this matter. Thus Loomis recommended injections of morphine for the uremia of acute nephritis, yet physicians in general have believed that he advised its use for all kinds of uremic convulsions.

Against the view that opium is useful in any form of uremic trouble Tyson makes a stand, and while he does not condemn its use absolutely, he believes that opium is useful in a very limited class of patients, so limited that it is wise for the general practitioner to make a rule never to give it. Here, again, we think Dr. Tyson has done the profession and its patients a service in pointing out therapeutic errors into which many of us have gradually drifted.

SOME RECENT IMPROVEMENTS IN ASEPTIC TECHNIQUE.

In the sixty-seventh volume of the *Archives of Clinical Surgery*, second half, are found some able papers upon asepsis, the most important, thorough and immediately practical being that of Mikulicz, who after a brief review of the changes in method which have taken place since the time of Lister, and some words of commendation of the aseptic method as elaborated by Bergmann and made more or less practicable by the ingenious devices of Schimmelbusch, advances the opinion that the results, so far as the assurance of healing of all wounds is concerned, are yet so unsatisfactory as to render imperative careful attention to the minutest details of operative preparation, and a painstaking revision of them for the purpose of abolishing sources of infection commonly unrecognized or neglected.

As to the absolute sterilization of dressing material, this, of course, can be accomplished by heating. There is, however, no generally adopted method by which the surgeon can know with absolute certainty that the dressing which is handed to him has been subjected to a sufficient degree of heat to accomplish such sterilization. In a well managed clinic errors on this point are not likely to occur. Still, it is always possible that they may. As a means of enabling the surgeon to be positive on this point Mikulicz suggests the following: A strip of unsized paper is marked with the word "sterilize" and is then painted over with a three-percent. starch paste. When half dry it is again painted with a potassium iodide solution, made by adding one part of iodine and two parts of potassium iodide to one hundred parts of water. The strip at once becomes of such a dark blue color that the writing is completely concealed. In hot steam this dark blue color disappears, or at least to an extent sufficient to enable the writing to become distinct. Dry heat will not accom-

plish this result. Under pressure in an apparatus in which the steam is raised to a temperature of 106° C. the strips which are hanging free are decolorized in ten minutes; those which are placed in the middle of a dressing not for twenty minutes or over. If the temperature is less than 100° C., more than an hour is required for the decolorization. The strip of paper thus prepared and placed in the center of a dressing proves positively that the dressing has been subjected to hot steam and not hot air, that the steam has been sufficiently hot for thorough sterilization, and that it has operated for a sufficient length of time. Experimental research has shown that even the most resistant bacteria are destroyed before decolorization of paper thus prepared.

As to the sterilization of sutures and ligatures, the present methods are absolutely satisfactory. The main points to be considered at present are as to the advisability of impregnating catgut with some material such as iodoform which inhibits germ growth, and the choice of a method of sterilization which renders the gut strong and easy to handle. Mikulicz prefers the Hoffmeister catgut, and states that he is in every respect content with it, that he never noted suppuration which could be traced to its use. It should be noted that according to Poppert, both catgut and buried silk sutures may occasion sterile suppuration. Hoffmeister's method is described by Vinberg (*American Gynecological and Obstetrical Journal*, June, 1897) as follows:

The gut is first immersed in a solution of formalin of from two to four per cent. according to the size, and allowed to remain in this solution for a period of from twelve to forty-eight hours. The formalin is then removed by washing in running water for twelve hours. It is then boiled in water for fifteen minutes, after which it is transferred to a vessel containing alcohol, where it may be kept until required for use. Carbolic acid in the proportion of two to four per cent. is added to the alcohol and makes the gut more firm, but it should be removed to plain alcohol some time before using. The secret of success in this method of preparation is to keep the gut in a high state of tension until after it has been boiled. Hoffmeister recommends that the gut be rolled tightly on glass; and Lange, of New York, has devised a small steel frame for this purpose.

The instruments are satisfactorily prepared by boiling in soda solution.

Infection, difficult or sometimes impossible to avoid, may arise from three other sources, namely, the air, the skin of the operative area, or the hands of the surgeon or his assistants.

The importance of air infection, at first greatly exaggerated, has latterly been too much neglected. It is true that the bacterial forms found in the air are most of them non-pathogenic and are of minor importance, excepting in and about hospitals where there may be large numbers of pathogenic micro-organisms floating about. This is particularly true of large lecture halls, where the ratio is markedly increased by the coming and going either of students or assistants. In small operative rooms the ordinary methods of cleaning and preparing are practically efficient, but to prevent the bringing in of bacteria by outsiders it is requisite that each should be covered with a perfectly clean mantle, and, a matter of greater importance, that each should put on rubber shoes, which have been previously cleansed and placed on a surface moist with sublimate. This is especially important in the case of medical students coming as they do from the dissecting rooms, pathological departments, and hospital wards, and bringing in on their shoes enormous numbers of virulent bacteria.

A much more important source of infection than that from the air of a room is that from the mouths of the operator and his assistants. It is sufficiently proven that in the mouths of perfectly healthy people pathogenic bacteria are found and these bacteria are virulent. Of forty-eight healthy persons examined, in one-third were found virulent yellow pus staphylococci. In the mouths of those suffering from ordinary sore throat, streptococci were found thirty times in forty investigations; staphylococci seventeen times. The majority of these micro-organisms were virulent. It is noteworthy that not only are the number and variety of the mouth organisms markedly increased by slight pathogenic processes such as sore throat, but also their virulence is greatly augmented.

In ordinary talking these bacteria are carried from the mouth in sufficient quantities to produce infection, whilst in clearing the throat, coughing, or sneezing, they are projected for the same distance in enormous quantities. Hence it is evident that some means must be taken to prevent these bacteria reaching the open surface of a wound, and this is particularly important when the surgeon has any inflammatory condition of his mouth or nostrils.

This protection is afforded by a double layer of gauze bound about the mouth and nose, or better, by a mask in the form of a chloroform mask, so fastened that breathing is easy. Investigation has shown that such a mask absolutely prevents the escape of bacteria while the surgeon is breathing ordinarily or talking, but that in clearing the throat or coughing it does not provide an absolute protection, whilst in sneezing the protective worth of the mask is extremely slight. Mikulicz has used such a mask for six months and states that he is so accustomed to it as to wear it without inconvenience.

Thus, by thorough previous cleansing of a room which has been specially devised for operations, by clothing all who come in and go out of that room with sterilized garments and putting on them rubber shoes, and by placing on the surgeon and his assistants gauze masks which prevent infection from the mouth, the possibility of infection from the air is reduced to a minimum.

The disinfection of the skin covering the wound area is a more difficult matter. It is proven beyond controversy that none of the disinfection methods are able to destroy the germs lying in the deeper layers of the skin. Alcohol and sublimate are somewhat more potent than carbolic acid and sublimate, but both fail in about fifty per cent. of cases. The important point, so far as infection of the wound is concerned, is, however, superficial disinfection. This is best accomplished by the thorough use of soap and water before the employment of alcohol and bichloride. Because of the impossibility of sterilizing the deeper layers of the skin it is important to keep the superficial layers protected so that they may not be rubbed off and thus expose the hands of the surgeon, the compresses and the instruments to infection. If the skin is affected with eczema or acne, or has developed in its substance pustules, operation should be postponed if possible. If not, Mikulicz first cuts through the skin and superficial fascia, then secures by means of long sharp tooth forceps a slit compress to the edge of the wound, not including the skin.

Although the stitching of healthy skin but slightly endangers infection of the wound during operation, it may occasion infection during healing by the medium of the stitch canal. Many stitch abscesses are caused by bacteria lying in the deeper parts of the epidermis. When the stitches are deep the infection may thus be carried to the depth of the wound. The danger of these abscesses is lessened by using very fine suture material and by not placing tension upon the stitches. Where tension sutures are required they should always be buried beneath the skin and a fine, loose, accurate running stitch should be used for superficial closure. Examination of the stitches removed at the time of the first dressing, usually in from four to eleven days, showed that very few were entirely sterile. Staphylococcus albus was usually present; in about twenty per cent. of the cases it was combined with the aureus. In the secretion of a few stitch abscesses no micro-organisms were found, and there were many cases of primary healing in which both the albus and aureus were found in the silk removed. There was one case of severe infection caused by the albus.

Drainage distinctly increases the danger of infection from the skin, and this danger can only be avoided by doing without draining. Since the bacteria of the deeper skin layers cannot be destroyed, Mikulicz advises the impregnation of suture material with an inhibiting agent, preferring for this purpose iodoform. Immediately before the operation he lightly paints the skin of the operative area with a tincture of iodine, holding that this agent exerts a protracted inhibiting force upon the skin bacteria, and finally, after closure of the wound, he covers it with zinc paste, thus preventing entrance of bacteria from without.

The sterilization of the hands is the most difficult problem of all. The most thorough and elaborate procedures have proven inefficient. Moreover, investigations show that individuals vary greatly as to their ability to cleanse their hands, some with apparent ease and in a short time approaching a degree of sterility which others seem quite incapable of reaching after prolonged efforts, and this to a certain extent was independent of the previous degree of infection of the hands, though it was noteworthy that in those who had to do with the operating upon and dressing of septic cases virulent pathogenic germs were always found.

Although it is true that in perhaps a large percentage of cases before the operation the hands may be superficially freed of germs, this does not last long. During the course of the operation the germs which lie in the deeper skin layers reach the surface in increasing numbers. Thus it follows that the danger of infection of a wound from the hands is greater in proportion to the length of the

operation, and hence some form of sterile covering to the hands is indicated. This protection is provided by sterile gloves, but not completely. Experimental research has shown that during the course of an operation the germs from the skin of the hand will pass through these gloves. None the less, the percentage of successes in surgery was markedly increased in Mikulicz's practise by the use of gloves, having risen from eighty-three to ninety-four per cent. He holds that generally the wound is infected by the finger points and the nails. To lessen the danger from these sources he paints around the nails and beneath them pure tincture of iodine, then dips the finger ends in the same solution. After that he washes his hands in lysol and then puts on his gloves. This application does no harm to the fingers. In long operations the gloves should be frequently changed. This is especially true in operations in which they become soaked with blood.

As a rule wounds should be closed without drainage, or there will result in about ten per cent. of the cases hematomata, which either have to be aspirated or are absorbed very slowly. If this formation is likely to occur, drainage should be continued for twenty-four hours; cases of thyroid extirpation are always drained for this length of time by Mikulicz.

Reports on Therapeutic Progress

ULCERATION OF THE STOMACH.

DUNCAN, in the *Intercolonial Medical Journal of Australasia* of March 20, 1898, says that in France, at least, this malady is receiving a great deal of surgical attention. M. Hartmann, at a late meeting of the Société de Chirurgie, gave his experience of the treatment of this grave malady by operative measures. The symptom chiefly calling for operation was the presence of grave hematemesis. The results quoted are not encouraging, since in a series of twelve operations no less than eight fatalities occurred. The operation adopted is that of gastro-enterostomy, an operation which at first sight seems scarcely calculated to attain the end in view. It is claimed, however, that the operation gives repose to the stomach, and lessens or does away with contraction of the pylorus, two conditions which favorably influence the ulcerative process. M. Hartmann has also adopted the same measure with success in a grave form of dyspepsia, with pyloric spasm, pain, and vomiting. So far as the spasm is concerned, he holds that it is benefited, whether it may be due to an ulcer, or to hyperchlorhydria, or anachlorhydria. He prefers an anterior gastro-enterostomy, and insists on the importance of fixing the bowel over a large extent of the anterior surface, so as to avoid a spur. It is in addition fixed obliquely from below upwards, and from left to right. He discards any form of anastomotic button. He first of all makes a double suture with silk (*en surget*). The first suturing includes all the tunics of the stomach and intestine, and is hemostatic. The second suture is sero-muscular, and covers the first.

In the discussion which followed, M. Routier related the case of a patient whom he had had under observation for a time. The patient was aged forty-five years, and had been the subject of grave dyspeptic troubles for a considerable period, with extreme pain and vomiting. He had thought of both ulceration and cancer in connection with the case, but as the patient continued to live, he found it difficult to conclude what was really the matter. Gastro-enterostomy was finally performed in May, 1897, and singularly enough no observable lesion whatever was detected. The gastro-enterostomy was made posteriorly with Murphy's button. Since then the patient's health has continued excellent, and all his symptoms have quite disappeared.

M. Tuffier raised the question of the diagnosis between ulcer and erosion in cases of grave hemorrhage from the stomach. He considered that clinically it was impossible to differentiate the two conditions. During an operation the ulcer could, of course, be felt, but an erosion would only be seen during an autopsy. He preferred to do the operation posteriorly, as the anterior method involved a risk of too much flexion of the intestine, unless the union was made over a considerable extent. One objection to posterior gastro-enterostomy was that a breach was made at the level of the meso-colon, which might ultimately allow strangulation of intestine to take place. But if care was taken to accurately close the opening that objection was done away with.

PUERPERAL ECLAMPSIA.

On this never-ceasing topic of interest T. G. STEVENS writes in the London *Lancet* of May 14, 1898. After considering the causes, prognosis and autopsy findings in eclamptic cases he proceeds to describe his

plan of treatment. This is based on the assumption of the toxemic theory and may be divided into two categories: first, the treatment of the cause of the disease, and secondly, the treatment of the convulsions themselves. The first, of course, is the more important, and briefly put, consists in aiding Nature as far as possible to eliminate the poisonous toxic principles from the body. The usual avenues for the elimination of excretions are the skin, the kidneys, and the bowels. We can stimulate either of these to increased action, and if the kidneys are inadequate the extra action of the other two may be made to compensate somewhat. To stimulate the skin and to promote diaphoresis we use the hot bath at 100° F., or the hot vapor or air bath, or the hot wet pack. The author need not go into the question of how to use these. He does not believe in drugs to induce sweating, and especially *not* pilocarpine. It is a dangerous drug to use in these cases on account of its depressing action on the heart and the danger of asphyxia from the large amount of bronchial mucus it produces. Drugs by the mouth, of course, are contraindicated because the patient is usually unconscious. As the urine is unusually scanty, and the kidneys are probably deeply congested, active measures must be taken to relieve these. An old-fashioned but very efficacious remedy is dry cupping to the loins, followed by linseed-meal poultices. Infusion of salt water (one drachm to the pint) into the veins or subcutaneous tissue is very useful in promoting diuresis.

In many of these cases the temperature is at very high tension, as shown by plethora and the very hard pulse; this condition by itself greatly embarrasses the action of the kidney (or possibly the inadequate kidney really produces it), and the author is confident that for such a condition there is nothing to compare with bleeding. It acts by relieving the circulation and lowering the tension, by diminishing the congestion of the kidneys, and very probably also by removing some of the toxic principles from the blood. The quantity of blood removed should not exceed twenty ounces. He has twice used bleeding in typical cases, and both times the result was all that could be desired; the pulse became slower and the tension was relieved, and the fits stopped entirely and did not recur. Bleeding must not be employed when the patient is anemic or when the circulation is feeble. The time-honored treatment for the bowels is to give two minims of croton oil, but the author is bound to say that this does not always have any effect. Any drug which can be given to an unconscious patient and which will produce a liquid motion may be used and will help to relieve the circulation.

With regard to the treatment of the convulsions the patient must be prevented from hurting herself through falling out of bed or biting her tongue. Chloroform must be given by inhalation, and light anesthesia may be continued for hours, increasing the dose if it seems to be coming on. As an alternative to chloroform morphine has been largely used of late years at the Rotunda Hospital, Dublin. It is given hypodermically in full doses until the full effect is reached, and it is claimed that the results have been better since chloroform has been abolished. There need be no fear of giving morphine on account of the renal complication. It does not seem to matter whether the kidneys are sound or not; indeed, morphine is largely given nowadays in chronic Bright's disease. Besides these bromide of potassium is generally given with or without chloral hydrate by the rectum—from thirty to sixty grains of the former and thirty grains of the latter—but very little good could be expected from them alone. His own experience of these drugs is limited to chloroform, but his cases are too few and too uniformly happy in their ending for him to be able to say much about it.

To the author's mind there can be no doubt that labor should be induced where eclampsia precedes. He is convinced that nothing gives the mother a better chance of recovery than a rapid but safe and deliberate delivery. No forced delivery should be attempted, the greatest care must be taken not to produce tears, and above all, the strictest antiseptic precautions must be taken; for a patient recovering from eclampsia is in the worst possible condition for withstanding septic microbes, and therefore is more prone to septicemia than other presumably less worn-out patients. Nothing could be more miserable than to pull a patient through an attack of eclampsia only to see her succumb to the ubiquitous streptococcus. The greatest success in these cases will be with him who carries out all these methods of treatment, not hesitating to pile up one upon the other until the disease is checked.

As a routine treatment for a given case the author would suggest the following: Give chloroform or keep the patient under

morphine and also give the bromides and chloral per rectum. Protect the patient from injury. Induce labor. Bleed if the pulse is hard and the patient is plethoric. Give a hot wet pack or bath. Dry-cup the loins and then put on linseed-meal poultices. Give two minims of croton oil on a bread crumb placed on the tongue. In a large percentage of cases a good result will be obtained if treated in this manner. Even with all this treatment, however, there are, unfortunately, cases which do terminate fatally; but as far as we are concerned, we cannot recognize them beforehand, and so we must not omit one item of the treatment.

THE USE OF IRON AND OPIUM IN BRIGHT'S DISEASE.

In the *Journal of the American Medical Association* of July 23, 1898, TYSON, of Philadelphia, tells us that he has learned since advocating iron in all cases of Bright's disease that there is a good deal of mischief done by iron in this malady, and he is not sure that it would not have been better for many patients if the gallons of Basham's mixture which have been prescribed since Dickinson first suggested it over twenty-five years years ago had been poured into the street gutter rather than into the stomachs of the patients it was intended to benefit. It is an interesting fact, confirming the statement already made, that scarcely a patient ever comes to him in consultation or is sent from another physician who has not been taking Basham's mixture, and it is further confirmation that in a very large number of these cases it is given under the impression that it has some specific effect toward curing Bright's disease. It is needless to say that it was never suggested for any directly curative purpose, but simply as a remedy for the anemia which is so conspicuous a symptom in many cases, and for this purpose it still is and always will be useful.

But not every case of Bright's disease is anemic, and as iron has no specific curative effect it is clearly not indicated in non-anemic cases. Nay more, it is often harmful. It is harmful by locking up secretion and checking elimination already restricted by the diminished functional activity of the kidney. The direct results of this are seen in headache and head-throbbing, associated with constipation and coated tongue, to which the patients themselves often call attention, and which appear much earlier in these cases than in persons who have integral kidneys. In such cases Basham's mixture or iron in any form may even precipitate uremic symptoms.

While anemia as determined by the appearance of the patient and more accurately by a blood count and hemoglobin measurement is the only indication for the use of iron, it is possible also to indicate in a general way the class of cases in which iron may or may not be useful. Thus it may be laid down as a rule to which there is almost no exception that iron is not indicated, and should not be prescribed, in cases of acute Bright's disease. Iron is at best a remedy of slow operation so far as good effect is concerned, while it is rapid in producing its harmful influence, whatever that may be. In acute Bright's disease there is not generally anemia, and where there is it is of secondary importance to more urgent symptoms. It is trespassing on nature, therefore, and embarrassing other more urgent treatment to give iron in acute nephritis. On the other hand, after the acute symptoms have passed away and convalescence sets in iron is often very useful.

A second class of cases in which iron is contraindicated and is more frequently harmful is chronic interstitial nephritis. The association in this condition of more general total destruction of tubular epithelium with restricted elimination goes to show that it is not unlikely that in parenchymatous nephritis, acute and chronic, the renal cells are capable of a certain degree of function even though they be cloudy and swollen. At any rate, it is in chronic interstitial nephritis that iron is more promptly and dangerously harmful than in any other form of Bright's disease. It does happen that in advanced stages of this affection there is sometimes extreme anemia, and it would seem that under these circumstances it might be used; and under such circumstances, if at all, it may be. But even in this, representing as it does the last stages of the disease, in which a dilated heart is staggering under a load it can barely carry and in which a last straw may either cause it to stop beating or furnish the spark to ignite a fatal uremia, the drug is of questionable value.

The form of Bright's disease in which iron is best borne is chronic parenchymatous nephritis; and as this is apt to be associated with more or less anemia it becomes a most valuable remedy in overcoming this symptom. Even here the doses given are usually needlessly large. The writer holds that wherever iron appears in the stools, for what-

ever cause administered, this unabsorbed portion is useless, and as it is this which acting as an astringent causes constipation, it is not only wasted but harmful. His practise is to determine the proper dose by an examination of the stools, and if these are decidedly blackened, he holds that he is giving too much. On the other hand a slight coloration may be permitted as indicating that a sufficient dose has been attained.

A further explanation of the general use of Basham's mixture is the very common impression that this preparation of iron is diuretic. The writer is inclined to believe that this is an error, or at any rate it is no more diuretic than the bulk of water which constitutes its menstruum. That some diuretic action may be expected from this source is rendered reasonable by the fact that Basham's mixture, and in fact any preparation of iron, is commonly freely diluted. The ingestion and absorption of so large a bulk of water may be reasonably expected, by the increased intravascular pressure which it excites, to produce increased secretion of urine.

As to the second of the drugs mentioned in the title of this paper, the writer believes the dangers of its use are more generally appreciated, and yet he is confident that many a life is sacrificed by the injudicious use of opium. He believes, therefore, that a word of warning cannot be out of place. That we should endeavor to understand the conditions contraindicating the use of opium in Bright's disease is the more important, because there are certain states in which opium has been held to be of signal advantage, namely, in the treatment of uremic convulsions. He regards the evidence in favor of the efficiency of hypodermic injections of morphine in certain cases of uremic convulsions as altogether too conclusive to admit of denial, yet he is certain that death has not infrequently been precipitated by it, and when he tells us he has seen a fatal uremia induced by a couple of teaspoonfuls of paregoric, he trusts to convey an adequate idea of the dangers of this drug.

First, perhaps, it is desirable to know the conditions in which opium is positively contraindicated. First and foremost is chronic interstitial nephritis. The writer regards the use of morphine in this form of Bright's disease as harmful in the extreme, and the hypodermic injection of morphine in such cases should be positively forbidden. It is this form of disease in which he has known so many cases launched upon a last sleep whence they have never awakened. He does not think it possible to be too emphatic on this subject, and he desires to raise his voice against it in the strongest terms. The beginning of the evil result is a diminution and finally a suppression of urine, followed by coma and death. It is especially in old persons in whom chronic interstitial nephritis is unsuspected in which this accident occurs. Hence, too, the importance of examining the urine of old persons before administering opium.

After chronic interstitial nephritis come cases of so-called surgical kidney or suppurating kidney due to stone in the bladder, tuberculosis of the kidney, and the like. The danger in these cases depends a good deal on the degree of kidney substance destroyed. It is well known that operation alone in some of these cases becomes the exciting cause of graver changes which terminate in uremia, as seen in the well known case of the Emperor Napoleon III, while Tyson is confident the use of opium has precipitated many more. Fortunately, the modern practise of surgeons in repudiating almost entirely the use of opium after operation has served to diminish largely the number of accidents from this cause, while another saving clause exists in the fact that while the kidney is often extensively destroyed, in many cases there remain considerable areas in which the kidney substance is sound. This is in marked contrast to the state of affairs in chronic interstitial nephritis, where the invasion is uniform.

Finally, the more extensive the destruction of the kidney, whatever the form of the disease, the greater the danger from the use of opium. Therefore, chronicity becomes in a general way a measure of the danger risked. The writer says, to some extent, because the progress in different cases varies so much, that duration is not always a measure of the destruction of the kidney. On this account chronicity has its limitations as a sign of danger when we have not chronic interstitial nephritis. On the other hand, it becomes more important to insist on great caution in the use of opium in every case of renal disease. In chronic cases of the more doubtful kind the way may be felt by means of very small doses gradually increased, where opium is indicated for any cause.

A corollary following from the last rule brings us to those cases in which the use of opium is least harmful and in many conditions most happy in its influences. These are cases of acute nephritis and of puerperal

nephritis, and the condition in which it is often useful is the uremic convulsion in such cases. The use of opium in the treatment of uremic convulsions in acute Bright's disease is intimately associated with the name of Alfred Loomis, and his original position has been much misrepresented. It was only in acute Bright's disease, as Dr. Loomis himself told the author, that he recommended hypodermic injections of morphine, while others claiming to follow him have advised it for convulsions in all stages. The writer believes Dr. Loomis' original position is justified and that we may still use with signal advantage this mode of treatment. The only risk lies in cases in which the diagnosis is doubtful, and the treatment should not be applied without careful investigation—indeed, dispensed with except in cases of absolute certainty.

The treatment of puerperal convulsions by the hypodermic injection of morphine is justified on the ground that most of these patients represent cases of acute nephritis. But here, even more than in the cases just described, great caution should be used, for not every case of puerperal convulsions is a case of acute Bright's disease, and now and then it happens that death is precipitated because such a case happens in which the use of opium is dangerous.

It will appear from what has been said that diagnosis is the safety gauge by which danger is to be averted. First of all, we should be certain that cases of other disease requiring the use of morphine are not complicated with chronic Bright's disease. Cases in which the writer has known accident to happen have been simple diarrhea calling for the use of opium, and violently painful conditions, such as angina pectoris. In no symptom of Bright's disease itself can opium be of use except in convulsions, and for this symptom only in cases of acute nephritis, whether originating from the ordinary causes or pregnancy, and so rarely in chronic parenchymatous nephritis that it may be practically ignored. Finally, under no circumstances in chronic interstitial nephritis should opium be used.

POST-PARTUM HEMORRHAGE.

J. V. Hennessey writes in the *Albany Medical Annals* for July, 1898, on this important subject. He believes that the causes predisposing to excessive hemorrhage are general or local. The general causes are usually the result of a morbid blood state, as in nephritis, diabetes, etc. The local causes are generally due to the condition of the uterus, as overdistention from multiple pregnancy, hydramnios, etc., also short or entangled cord, with resulting traction on the placenta, and precipitant labor.

Etherization of the patient seems to act as a cause, whether because of the anesthetic or because it is most often used in abnormal or instrumental labors the writer does not know, but certainly he has seen severe hemorrhage following its use in an undue proportion of cases. When any of these predisposing causes are operative, they may be recognized, and to an extent guarded against. There is one symptom, however, often unconnected with any of the predisposing causes mentioned, the presence of which always warns him of the probability of serious hemorrhage either before or after the expulsion of the placenta, and that is a marked irregularity in the rhythm or force of the uterine contractions.

The writer believes the irregularity of contractions is due to partial and often very slight separation of the placenta, as he has observed in some of these cases a firm and adherent clot of blood on the margin of the placenta. In these cases the loss of blood is greatest before the expulsion of the placenta, as a rule, and the treatment should be prompt, and if necessary vigorous, to induce its removal. This is generally not a difficult matter, but he recalls a case within the last year in which he had to care for a most unruly patient, with an hour-glass contraction of the uterus, retaining a partially separated placenta, with excessive hemorrhage. In this case the treatment consisted of passing the hand into the vagina, forming a cone of the fingers and thumb, and making a strong and steady counter-pressure over the fundus. The cone or wedge gradually overcame the contraction and removal was effected.

The treatment of hemorrhage after the expulsion of the placenta may be summarized as the administration of ergot by the mouth or hypodermically; the intra-uterine injection of hot water, vinegar, or some other styptic; the placing of pieces of ice in the uterine cavity; the removal of blood-clots from the uterus by the hand. The value of ergot is undoubtedly great when administered in the latter part of the second stage of labor, after it has had time to be absorbed, in producing and continuing firm uterine contractions. But in the face of a present and severe post-partum hemorrhage the writer

hardly thinks that it would pay for the time lost in administering it. The injection of hot water or of vinegar is no doubt of value, but either takes time, which he believes might be much better employed. The one means upon which he has long relied is the manual and rapid removal of retained blood-clots. Since he first realized the importance of this procedure he has lost the dread of this complication. It is to the method of doing this and to what may be observed in its performance that he particularly desires to call attention.

Sometimes the uterus is flaccid and does not contract firmly, and in such cases the clots may be large and soft. More often, however, there seems to be moderately or even decidedly firm contraction. The organ is firm and small, and may be grasped in the hand, while at the same time the blood pours from the vagina. If now the uterus be firmly held in one hand and the other passed into the vagina (this is easily and quickly done after the passage of the child), the index and middle fingers enter the uterus, which at the same time is steadily crowded down by pressure on the fundus. The fingers then discover, not clots of any size, but a velvety feeling, as they sweep around the cavity. Now if a vigorous scraping by the ends of the fingers, not the nails, includes every portion of the under surface of the uterus, and particularly the higher part of the fundus, where at this time the cavity is small and wedge-shaped, the velvety feeling will disappear, and the firm, muscular wall of this organ will be distinguished.

If the hand is now withdrawn, a few small, firm shreds of blood-clot will probably be brought out on the fingers. They may not in bulk be much larger than a white bean, and would easily escape notice unless looked for. Thus far the writer has yet to see a case in which the bleeding was not instantly checked, and it did not return after this treatment. If owing to a morbid blood state hemorrhage should still continue, he believes that a piece of gauze saturated with a styptic solution (vinegar being probably the best) passed into the uterus and left there for an hour would be the most promising treatment. [The objection to vinegar is that it is not aseptic.—Ed.]

In every work on obstetrics great stress is rightly placed on the necessity for the removal of blood-clots in post-partum hemorrhage, but Hennessey does not believe that the important part that the small shreds assume in contributing to a localized atony of the uterus and consequent loss of blood is very generally appreciated. The stimulus to firm uterine contraction produced by the grasping hand outside and the scraping fingers within no doubt is considerable, but as severe bleeding often takes place from what appears to be a firmly contracted uterus, the writer feels that the small shreds, spread like a film over the placental site, produce their effect by keeping open the uterine sinuses.

In closing the writer remarks that of all puerperal conditions requiring treatment, it is most essential that this one should be promptly met, and to do this it should be discovered in its very beginning. For this reason, during the first twenty or thirty minutes following labor the hand should be often slipped over the fundus uteri so that any undue enlargement from concealed hemorrhage may be quickly recognized. This, with some watchfulness of the pulse and of the discharge, will be a sufficient guard.

TEMPORARY RELIEF OF TOOTHACHE.

Under this heading we are told by Ackland in *Treatment* of June 23, 1898, to treat toothache in the following manner:

First syringe and well wash out the cavity or cavities with a solution of carbolic acid in water (one in forty) to remove the mechanical or chemical irritants as far as possible. Now take two pieces of cotton-wool and prepare them as follows: The first, a mere shred, soak in carbolic and water, one in twenty; the second, and larger—of a size so as to nearly fill the cavity when slightly compressed—soak in ordinary surgical collodion. Then dry out the cavity with a piece of cotton-wool, using an ordinary pair of dressing forceps, and immediately insert the shred of cotton-wool wet with the carbolic solution, followed as quickly by the large pellet of collodion wool. Should the shape of the cavity be against its retaining this temporary stopping, try to use a surface of an adjoining tooth to help to keep it in. The collodion precipitates in the meshes of the cotton, and will soon form a temporary stopping, which, although not of course preventing further decay, will generally tide the patient over for a time, without further pain. If there be more than one sensitive cavity, put a temporary stopping in each.

Inflammation of the peridental membrane and periosteum is generally a result of the death of the tooth following on the further

development of a foregoing pulpitis. It is generally very easy to diagnose, as the slightest pressure on the affected tooth causes pain, and tenderness on the gum over the root or roots is always present. In the mild form it is best treated by drying the gum and painting on a liniment made up as follows:

Liniment iodi,
Tinct. aconiti, of each 1 minim;
Chloroformi, 10 minims.

In this form it is sometimes associated with pulpitis, in which case treat the pulp first and paint on the liniment after. In a later stage, but before suppuration has taken place, inject into the periosteum three or four minims of a one-per-cent. solution of cocaine, freshly made with distilled water, or, failing cocaine, use distilled water only. Hold the point of the needle obliquely against the side of the tooth so as to guide it into the interval between the root and the alveolar bone. In the suppurative and abscess stages poppy-head fomentations held hot in the mouth is generally the most effective treatment. They are best made by taking two ounces of poppy-heads and boiling them in a pint of water sufficiently to evaporate to half a pint in volume, straining off the liquid, and using it hot. Leeches, with or without a tube, can be applied if the patient will undergo the treatment. If an abscess be present it should be drained if possible.

A great deal of relief is often given by general treatment, such as the use of calomel and mild purges.

ON THE USE OF THE SENECIOS IN FUNCTIONAL AMENORRHEA.

An exhaustive and valuable paper on this topic has just been printed in the *Edinburgh Medical Journal* for May, 1898. As the result of a long series of experiments the writer is led to agree with Murrell that "senecio is not an ecbolic." He also agrees with Murrell that the drug will not provoke menstruation in cases of marked anemia or advanced phthisis, but will do so in cases of functional amenorrhea. Murrell, however, judged that senecio increases the quantity of the discharge, while his own cases point to the opposite conclusion. The views of Bardet and Bolognesi are identical with the author's on these points, though they differ as to the mode of action of the drug. As to dysmenorrhea, Murrell and Dalché and Heim found the drug useful in certain cases, while he is inclined to agree with Bardet and Bolognesi that it will not be found of much advantage for the relief of pain.

A little thought on the physiology of menstruation will provide a working hypothesis for the action of senecio which is sufficiently reasonable to justify its use, and which also defines its indications.

A man, while his weight remains constant, elaborates from his food an amount of highly organized material exactly equal to the amount of similar material broken down by his activity and removed from his body by lungs, kidneys, and skin. Income and expenditure of protoplasm in the adult healthy male are equal—the anabolic changes balance the catabolic.

A woman, on the other hand, manufactures during her reproductive life highly organized material in a quantity larger than that needed for her individual use. Her protoplasmic income is greater than her protoplasmic expenditure from puberty to the menopause—her anabolic changes preponderate over the catabolic, and the balance is expressed as follows: During pregnancy the anabolic surplus goes to form the fetus; during lactation it supplies the milk; at other times it is lost at monthly intervals by hemorrhage from the uterine mucosa. Before puberty and after the menopause, though female in structure woman is not reproductive in function; and the balance between the anabolic and catabolic changes that together constitute her metabolism is disturbed, as in man, only when weight is being gained or lost. Thus we can see the physiological significance of a periodic sanguineous discharge from the uterine mucosa. With the evolution of the function we are not here concerned, nor yet with the adaptation of the human ovum for implantation on a surface denuded of its epithelium by menstruation. It is necessary, however, to know what determines the particular time at which menstruation shall occur.

Congestion of the reproductive organs accompanying the rupture of an ovisac has, until recently, been thought to be the immediate cause of each menstrual flow. But we now know that ovulation can occur without menstruation, and that menstruation can go on without ovulation. The proofs of these statements are too well known to need recapitulation, but two cases described by Bossi may be mentioned. In one there was monthly bleeding from the anus in a patient who had no vagina, and in whom both ovaries and uterus were infantile. In the other case, a

woman aged thirty-seven, who had always menstruated regularly, became affected with too prolonged periods, during which the discharge was unduly large in amount. Hysterectomy was performed and it was found that she had no ovaries nor tubes! The fact that the removal of both ovaries and tubes does not always cause cessation of the menstrual function points to the conclusion that when Battey's or Tait's operation does cause a premature menopause, it is not through the removal of the organs, but by the division of certain nerves in the broad ligaments. This view has led to the formulation of the "nervous theory" of menstruation; and we now agree with Christopher Martin that the function is presided over by a special center situated in the lumbar part of the cord, and that impulses to menstruate reach the uterus through the pelvic splanchnics or the ovarian plexus, or by both routes.

Thus menstruation expresses an anabolic surplus produced by the healthy human female from puberty to the menopause, its occurrence being determined as to time by the activity of a special center. In the light of this view of menstruation, we see that substances like iron, which affect the quality or quantity of the blood, are only indirectly emmenagogues. Substances which, by causing renal or gastro intestinal irritation, promote pelvic congestion and uterine hemorrhage should hardly be called emmenagogues at all. A true direct emmenagogue must act on the nervous mechanism which initiates menstruation, and this appears to be the mode of action of senecio.

Having thus cleared our ideas, we can now classify the commoner kinds of amenorrhea in a way which shows which cases are suitable for direct treatment by an emmenagogue such as senecio.

Amenorrhea due to congenital or acquired deficiency or absence of essential reproductive organs—no treatment.

Amenorrhea due to local defects, such as atresia vaginæ, atresia cervicis (congenital or acquired), neoplasms, etc.—surgical and other local treatment.

Amenorrhea due to general disease, which so disturbs metabolism that the patient has no blood to spare, *e.g.*, anemia, phthisis—treatment by drugs and food, acting indirectly.

Functional amenorrhea, due to want of activity of the nervous mechanism initiating menstruation; this includes cases in which the function has never been established, but where there is no general or local defect sufficient to account for its absence; also cases in which menstruation is arrested by mental or physical shock, hope or fear of pregnancy, and other causes—treatment by a direct emmenagogue, such as senecio.

Several species of the genus Senecio which have been specially investigated are as follows:

Senecio vulgaris and *S. Jacobæa:* Two alkaloids, senecine and senecionine, in small quantities.

Senecio aureus: Used in America.

Senecio maritimus: Used in France.

Senecio canicida, Mexico: Fatty acid, poisonous.

Senecio Kæmpferi, Java: Fatty acid (Shimoyana).

Senecio hieracifolius, United States: Resin and essential oil.

Senecio erucifolius: Alkaloids both present in some quantity.

Senecio paludosus: Alkaloids in still greater quantity.

Senecio gracilis: Known to herbalists.

Shimoyana found a new fatty acid in *Senecio Kæmpferi*, a Javanese species. It was named senecic acid ($C_6H_8O_2$), but is not necessarily identical with the fatty acid of the same name found in *Senecio canicida*, a Mexican poisonous species. This latter is a colorless volatile liquid, whose salts are soluble in water; twenty centigrammes will kill a small dog in four to six hours. A phase of excitement is followed by a phase of depression; then convulsions occur—first clonic, later tetanic; finally, the reflexes are suppressed, and heart and respiration are arrested (Guillouet and Toussaint). In spite of the convulsive action of its acid, *Senecio canicida* has been recommended in epilepsy by Mexican physicians.

Senecin is the brown resinous substance derived from *Senecio Jacobæa* and other species. It was used by Murrell, and was believed by him to contain an active principle of the plant. It is probably a mixture. A resin and an essential oil have been obtained from *Senecio hieracifolius* (Syn. Erechtites), a species found in the United States (Todd and Lloyd).

Senecionine ($C_{18}H_{25}AzO_6$) and senecine are two alkaloids isolated by Grandval and Lajoux. They are bitter bodies, whose salts are soluble in water, and are found in very small quantities in *Senecio vulgaris* and *Senecio Jacobæa*, but in slightly larger proportion in *Senecio erucifolius* and *Senecio paludosus*.

The alkaloids exist only in the subterranean parts of the plants. As the difficulty of obtaining them in any quantity has hitherto prevented their use for clinical experiments, Dalché and Heim propose making separate liquid extracts of the aerial and of the subterranean portions of the plants, experiments which will decide whether the emmenagogue action is due to the alkaloids or to some other active principle. But if Lutz is correct in stating that the alkaloids are found in the root alone, the emmenagogue action cannot be due to them; for the author's liquid extract, which is certainly active, is made from the aerial portion of the plant alone, and therefore should not contain alkaloids. The writer therefore thinks with Murrell that the resinous "senecin" contains the emmenagogue principle.

Wiet found by experiment on frogs and guinea-pigs that chlorohydrate of senecionine destroys the excitability of motor nerves, but leaves intact the irritability of muscle itself. In sufficiently large dose it is a curariform poison. Its effect on sensory nerves remains doubtful. It slows the action of the heart, and in fatal doses stops the organ in systole.

RHEUMATIC PERICARDITIS AND ITS TREATMENT.

In *La Presse Médicale* of June 4, 1898, is an article by PLICQUE upon this subject. After pointing out that rheumatic pericarditis is in the adult more rare than endocarditis, but in children that rheumatic pericarditis is the more common lesion of the two, and after describing the symptoms of this disease, the chief one of which is perhaps violent pain, he goes on to point out that signs of cardiac collapse, syncope, small pulse and cyanosis may be present. In some of these instances the pericarditis is complicated by a true myocarditis. The treatment is first prophylactic. There is no doubt in Plicque's mind that while the salicylates do much towards relieving the articular pain, they are of little value in preventing cardiac complications, except in that they shorten the duration of the disease. Small doses of sulphate of quinine may also be valuable as a supportant and prophylactic treatment. After the pericarditis has once been established the chief part of the treatment should consist in local counter-irritation. Leeches may be applied over the precordium or wet cups may be used, and this method of treatment often relieves the dyspnea and precordial pain. In some instances the ice-bag, which has been highly recommended by some clinicians, is not well borne, and in its place local applications of mercury and belladonna ointment placed upon flannel may be made. After the acute stage of the pericarditis is past a blister or a cautery may be useful. For the cardiac feebleness small doses of digitalis are advisable, but should these doses produce great slowness of the pulse then tonic treatment consisting in the administration of alcoholic beverages such as champagne, coffee and acetate of ammonium may aid the digitalis. Subcutaneous injections of ether, caffeine, camphorated oil and inhalations of oxygen are also advisable. The necessity for paracentesis in pericarditis rarely arises, but if it does the fifth interspace to the left of the sternum is the best point for inserting the needle.

THE TREATMENT OF ACUTE PERITONEAL TUBERCULOSIS.

At a recent meeting of the Paris Society of Surgery, LEJARS reported two cases of peritoneal tuberculosis of recent origin and rapid progress, one of which simulated intestinal obstruction, the other acute peritonitis due to perforative appendicitis. In both instances the condition of the patient was most grave when Lejars practised laparotomy. On opening the belly it was found that no strangulation existed, but that the peritoneum was covered with tubercular granulations. After washing the abdominal cavity with artificial serum the abdomen was closed. The acute symptoms disappeared and the general and local disorder was ameliorated, and he believes that the operation has resulted in both a temporary and permanent cure of the case.—*Journal des Praticiens*, June 18, 1898.

ARREST OF HEMORRHAGE FROM LARGE VESSELS BY SUTURING.

LINDNER (*Berliner Klinik*, April, 1898) reports a case in which, during an attempt to close a fecal fistula in the left groin, the common femoral artery and vein were both opened. The bleeding from the vein was arrested by resection of about three-quarters of an inch of the wounded vessel and by double ligature. The arterial wound, on the other hand, was closed by two rows of fine silk sutures. The patient, an old and feeble man, made a good recovery.

The author remarks that, whilst occlusion

by ligature of a large arterial trunk alone, or of the accompanying venous trunk alone, is not likely to be followed by gangrene of the distal parts, simultaneous ligature of both vessels is, in this respect, attended with much risk, which is more likely to occur after wounds of both common femoral vessels than after a similar injury either of the axillary vessels or of the large vessels of the neck. Experiments on animals and the successful results of cases recorded by Schede have proved that under modern conditions of practical surgery a wounded vein may be sutured effectually without any risk of phlebitis. The indications for suturing are much more urgent in the case of a wound of a large artery, for, however small the wound may be, the prospects of closing it by compression are not so favorable as in the case of even a large venous wound. The practise of suturing an arterial wound must be subject to certain restrictions, as experience has proved that it would not be safe to apply a suture to a transverse wound involving more than one-half the circumference of the vessel. In such cases it would be advisable to resort to the practise advocated by Murphy of resecting the injured portion of the artery and bringing the ends together, the proximal end being invaginated into the distal one, and fixing them by five sutures. In practising arterial suture Lindner would transfix all the coats of the vessel, and in selecting the material of his suture would prefer fine silk to catgut. —*British Medical Journal*, June 11, 1898.

THE ANAPHRODISIAC ACTION OF THYROIDIN.

Anaphrodisiacs are not greatly in demand in therapeutics, though various drugs are known to exert incidentally a depressing effect on the genital functions. According to Dr. Riviere, of Lyons, thyroidin is one of the latter group, and he reports two typical cases of men who sought relief from exaggerated obesity in the thyroid treatment. They both lost weight very rapidly under the influence of the drug, but observed with surprise, not unmixed with apprehension, that the sexual function had fallen completely into abeyance. This condition persisted for some time after the cessation of the treatment, though the function was eventually restored. It is suggested that this "therapeutical castration" may possibly help to explain the inhibitory influence exerted by the gland on the growth of uterine myomata and especially on the hemorrhage which their presence occasions. On the same lines there is reason to believe that thyroidin may prove useful in the treatment of prostatic patients whose troubles are due to congestion of the genito-urinary apparatus. — *Medical Press and Circular*, June 1, 1898.

THE VALUE OF CERTAIN DRUGS IN THE TREATMENT OF GOUT.

In *The Lancet* of June 11, 1898, LUFF, the authority on gout, concludes that the ordinary alkalies, the lithium salts, piperazine, and lysidine, do not exercise any special solvent effect on sodium biurate, and their administration to gouty subjects with the object of removing uratic deposits in the joints and tissues appears to be useless.

Sodium salicylate does not exercise any special solvent effect on sodium biurate. Its administration with the object of removing uratic deposits in the joints and tissues appears to be useless, and, moreover, it is apparently contraindicated in gout on account of its leading to an increased formation of uric acid in the kidneys.

THE TREATMENT OF UREMIC CONVULSIONS AND COMA, WITH SPECIAL REFERENCE TO THE SENILE KIDNEY.

In a recent issue of *The Lancet* WILKINSON, in writing upon uremia, has much of practical use to say of its treatment. He thinks that the prevention and treatment of uremia in senile kidney and other renal failures may be best considered under two heads: (1) attention to diet, and (2) measures calculated to aid excretion, to lower arterial tension, and to quiet convulsions. Though of the greatest importance, a few passing remarks must suffice for the former. Temperate living in old age would lengthen many a life, warding off apoplexy and uremia. Indeed, the marked difference in personal comfort and vivacity brought about by a change in table habits has often astonished both the patients and their friends, as the former entirely ceased to discuss whether life was worth living. This need not entail the adoption of liquid or invalid diet, for in advanced life the stomach usually secretes and digests more satisfactorily when stimulated by solid food than when treated to "slops." The sum total of food should be restricted within

reasonable limits. This is more important than any specific act of self-denial. If an egg or fish be allowed for breakfast animal food should be permitted at one subsequent meal only, and that not too late in the day. To prevent undue condensation of urine the amount of liquid imbibed should average forty fluidounces and be taken chiefly between meals, lest it dilute the gastric juice. Intoxicating liquors are better forbidden; if insisted on, a small amount of diluted dry spirit during the chief meal and at bedtime may open the tardy stomach arterioles and favor sleep. That vascular tension is thus kept down is matter of observation. Prolonged uremic coma, just like an attack of gout, is a time of diminished ingestion, and the latter no doubt aids the recovery.

Under the second head the author discusses in more detail the value of (*a*) purgatives; (*b*) chloroform, bleeding, and the nitrites; and (*c*) diaphoretics. The importance of attention to the bowels cannot be overestimated. Not only does regularity greatly lessen the chances of secondary fermentations and toxin formation, but by purgation we can turn out of the body bile and half-digested food and also command the radicles of that vein which carries the crude products of digestion to the great provident dispensary of the body, the liver, where for weal or woe so many mixtures are made. Modern abdominal surgeons, whose one aim in the old days was to keep the intestines quiet, are now beginning to realize their value in elimination and to substitute calomel and salines for opium. They talk of "the race for the bowels," and use the intestine as if it were a drainage tube.

The writer firmly believes that in commanding the liver and intestines we hold the most important excretory area in the body after the kidneys. In this respect the views of the late Dr. Mahomed were undoubtedly correct. Indeed, the efficacy of purgation in high arterial tension and uremia is acknowledged by all, but there is still considerable diversity of opinion as to the relative value of the different drugs. May we employ calomel? Sir William Broadbent places it *facile princeps* amongst the drugs which lower arterial tension and strongly advocates its use in from two- to five-grain doses. Many other writers—*e.g.*, Dr. Whitla in his excellent Dictionary of Treatment—only mention it in order to warn their readers not to prescribe it, and the writer's early training and teaching ran in the same groove. Now he frequently exhibits it when he has reason to regard the uremic phenomena as out of proportion to the organic renal change. Should the cells of the kidney be much degenerated—that is to say, in parenchymatous disease with dropsy, marked albuminuria, and abundant fatty epithelium and casts—the drug is distinctly dangerous. Quite recently he saw such a case in which five grains of calomel had been given. It stopped the uremic vomiting, relieved for the time the headache, and lowered the blood tension, but the marked swelling and tenderness of the salivary glands and gums, the furred, foul tongue, etc., gave ample evidence that the administration was a mistake.

In the terminal uremia of Bright's disease calomel acts as a poison, and the more definitely the cerebral phenomena depend on organic renal failure the more doubtful the use of mercury. The condition of the kidneys in Bright's disease is in the writer's opinion to be our guide. It is the fact that severe convulsions and coma may be associated with a minimal or passing renal defect that makes calomel admissible. That all such cases have exactly the same pathological substratum the writer is far from believing, but the use of calomel is not limited to those conditions in which the renal trouble is only transitory. Whenever the blood tension is high, the urine is passed in fair quantity, of average or high specific gravity, deposits urates and contains only a small amount of albumen, he employs calomel without hesitation. Taken alone the amount of albumen present is of little importance. In puerperal convulsions he has seen very highly albuminous urine return to the normal within a few hours. Numerous and varied renal casts must, however, make us pause, more especially if they testify to chronic tubal change.

In senile failure, and in the middle and later stages of chronic interstitial nephritis, we must remember that the system is sensitive to mercury and therefore recall Dr. Ringer's remarks on minimal dosage. In early days the writer saw thirteen grains and twenty grains of calomel given as a purge with excellent results. The Cheadle bulldogs, of local repute, are said to owe their ferocity to this drug. Such treatment in renal failure could only be regarded as tempting Providence. One grain is often an ample dose. Quite recently the author saw a gentleman, well in the "teens" of stones, who smiled at the powder in the evening, but

assured the writer that his respect for it was considerably raised on the following morning, as it kept him from business. A lady, aged seventy-six years, who was under his observation for several years with gouty cardio-arterial and retinal changes, was severely purged by one grain of calomel, but so greatly relieved thereby that for three or four weeks after each dose she seemed to have taken a new lease of life. The same lady for three years took five grains or more of pulvis ipecacuanhæ compositus every night with great advantage, a method of administering opium in Bright's disease which the author considers to be safer than any other. As commonly happens, this patient died from an acute and entirely independent affection.

Calomel undoubtedly reduces high arterial tension and relieves the troublesome cardiac, pulmonary and cerebral phenomena associated with it. It takes several hours to act, but the effect produced is less evanescent than with other drugs. How calomel acts the writer does not profess to explain. That mercurials will often clear a dense uratic urine is known to all. Elimination of bile by the bowel is probably the principal part of the programme. Anyhow, in dealing with high tension calomel is superior to all other purgatives, including blue pill. It sweeps and drains the intestines as well as the hepatic ducts, and in his opinion differs materially from crude mercury in its action. In a case of obstructive jaundice of some weeks' standing, now under the writer's care in the Manchester Royal Infirmary, in which the administration of olive oil, massage and other treatment have failed to remove the obstruction, both patient and medical man gave independent witness that one grain of blue pill taken three times a day increased the color of the skin and urine, while one-grain doses of calomel caused decided improvement in the digestion and complexion and lessened the urinary excretion of bile, in spite of the continuance of the block in the main duct.

Next to calomel, but as its aide-de-camp rather than its substitute, the author does not hesitate to place Epsom salts, and in acute cases he is accustomed to follow up the calomel after five or six hours with two- to four-drachm doses till free purgation occurs. In chronic high tension an aperient dose of the *mistura alba* on rising each morning gives very definite relief. He uses it extensively in out-patient practise and finds, as Dr. Whitla observes, that it can be continued with advantage for long periods. Our mercurial ancestors, with their nightly blue pill and morning black draught, and their by no means delicate attentions to the *primæ viæ*, were perhaps nearer the mark than some of the more scientific moderns. The writer is told that a friend of his, a clergyman, was a younger and a better man whenever he had time and grace to attend to his bowels. When calomel is contraindicated, and especially if dropsy be present, he often employs the compound jalap powder in drachm doses. Some fortify it with elaterium; but Wilkinson's experience of the latter drug has not been encouraging. On two occasions the fault may have been in the quality of the drug supplied; in other cases it has been rejected or failed to act. An extra drachm or two of bitartrate of potash may be added, as recommended by Sir William Roberts, with excellent result.

There are, however, cases in which the convulsions are so severe and the whole condition so critical that some method of treatment more rapid than purgation is urgently demanded. If the blood tension be high, Wilkinson believes that both theory and practise uphold blood-letting as a reasonable and efficient remedy. It is true that physiology teaches us that moderate venesection does not lower the arterial blood-pressure, and arguments have been based on this statement deriding its utility in disease. But surely a deviation from the normal is a very different thing from a return to the normal. The aim of the automatic regulating mechanism of the body is to secure normality. It may raise the blood-pressure with a view to increased excretion, but it will gladly allow a return to the normal if practicable.

The writer advocates bleeding as a temporary device to tide over a crisis; that it accomplishes its end is undoubted. It must in most cases be backed up by measures more definitely depurative in character, dietetic and excretory. Some obstetric writers, like Dr. Galabin, absolutely set their faces against it. A friend of the writer's, surgeon to a large hospital, who has had a wide experience in such cases, told him that the only patient he lost in puerperal convulsions was the only one he did not bleed. Its utility in uremia is maintained by such authorities as Sir William Roberts, Sir William Broadbent, and Dr. Osler. It may be employed with advantage in all cases in which calomel is admissible. Where the patient is already very anemic and the kidneys are far advanced in organic disease, both remedies are

worse than useless and the prognosis is not markedly affected by any treatment. In the clergyman first referred to the congested face and full habit of body distinctly warranted the use of the lancet, but the absence of convulsions allowed time for the action of still better remedies.

In dealing with severe puerperal eclampsia chloroform by the lungs and chloral and bromide per rectum are of unquestionable value. Nevertheless, though they mitigate the convulsions, like morphine they mask the coma, and the writer is bound to confess that when the pulse tension is high and the patient is plethoric he is inclined to the older method of treatment. Of the reputed value of morphine in uremia proper he has had no experience and prefers to commence the trial of it on his enemies rather than on his friends. Still it is peculiar that the two drugs, mercury and opium, against the use of which in Bright's disease we were formerly warned, should be now both to the front in the treatment of uremia. This does not prove that the former fears were groundless, but rather supports the writer's present position, namely, that the more pronounced symptoms of uremia, coma and convulsions, are often associated with comparative renal integrity.

In dealing with the results of chronic high tension, the writer has found the nitrites very useful, but so far has not tried them in actual convulsions. An aching head or a heart struggling irregularly and painfully against an overfull arterial system will at once gratefully acknowledge the receipt of a dose of nitrite of ethyl, as suggested by Dr. Leech, or more slowly respond to tabellæ of nitroglycerin. The latter preparation, because of its stability and ease of administration, he frequently employs in chronic high tension. It gave great relief to the second case and may be used to diminish the intense headache which often accompanies the development of albuminuric retinitis. The sphygmograph readily reveals the action of the drug and may be employed to indicate the amount and frequency of the dose required to mitigate the tension. The writer uses the term "mitigate" advisedly, for to relieve the symptoms it is not necessary, nor indeed is it an easy matter, to establish a normal tension. A tabella every six or eight hours is usually sufficient to accomplish the desired end. In one case of cardiac asthma with very irregular high-tension pulse the relief given by the nitrites was so great that the patient was immediately transferred from his bed to the local races, and the latter end of that man was worse than the first. As his medical attendant observed, the treatment both cured and killed him. Sometimes the nitrites produce definite diuresis, but even this should not lead us to set aside other eliminatory measures. When the kidneys fail the skin presents a large and active secretory area second only in importance to the mucous membrane and glands of the alimentary tract. The fact that in Bright's disease urea is excreted by the skin is a definite indication to the therapeutist. Of every-day drugs the sweet spirit of nitre and the acetate of ammonia are the most popular and valuable diaphoretics, but in uremia we are compelled to adopt more active measures, such as the external application of heat, wet or dry, and the hypodermic injection of pilocarpine. The hot pack is one of our most valuable remedies and available in almost all cases. It is, however, to be specially selected when calomel and venesection are out of the question, when the system generally, and the connective tissues in particular, are drowned in ureated liquid, and when the brain disturbance is more dependent on direct intoxication than irregularities of arterial pressure; in other words, in the dropsical uremias of blocked or bankrupt kidneys.

The employment of pilocarpine hypodermically is not without its dangers. Nevertheless, if other remedies fail, it may be tried, provided the patient possesses full power of deglutition and the thoracic organs are in good condition. Its action should be assisted by the use of hot blankets, or bottles, and warm drinks. Usually the response of the skin is rapid, a few minutes sufficing to start the perspiration, but the response of the system is somewhat more uncertain in time and degree. The effect produced, however, in some cases, as in the second already referred to, is very striking. Personally, the writer avoids the use of the drug if possible, but confesses that he has not tried the method of inunction recommended in milder cases by some writers with the object of reducing the risk of cardiac collapse and pulmonary edema to a minimum. As pilocarpine is recommended in some forms of insanity it may be interesting to add that the writer's friend, Dr. Wansbrough Jones, after the hypodermic injection of one-third grain for ocular disease, witnessed the immediate development of acute melancholia with attempted suicide, and the repetition of the dose some time

later at the recommendation of the oculist led to a similar disturbance followed by several months' detention in an asylum. As there was no family history to suggest such a complication the drug was naturally suspected. At any rate the dangers of pilocarpine are sufficiently real to render its use a matter for deliberation.

THE TREATMENT OF SUPPURATION BY BICARBONATE OF SODA.

BRUCKER (*Thèse de Bordeaux*) has made a study of a fact observed by himself, namely, the influence of the reaction of the blood in the healing of certain conditions. Bearing in mind that the normal alkalinity of the blood shows important variations according to sex, age, and as to whether the blood is arterial or venous in origin, and the diet to which the patient has been addicted, and that in certain pathological conditions these variations are very marked, so that a reduction in the normal alkalinity is observed in certain cases of febrile reaction due to bacterial intoxication, he has found that certain artificial intoxications can be combated by raising the alkalinity of the blood by the injection of alkaline serum. Going on these grounds, Brucker has principally investigated the influence of alkaline dressings in the treatment of local inflammatory affections, and according to his observations such a dressing, whether moist or dry, very rapidly reduces the inflammation, suppurative or otherwise, and causes rapid healing of wounds. This seems independent of any antiseptic property in the proper sense of the word. The method employed by him is to apply the dressing of absorbent wool on ordinary principles, using merely a two-per-cent. solution of bicarbonate of soda, or in some cases vaselin and bicarbonate (1 in 25), or the soda may be applied directly in the form of a powder. He finds that strong solutions do not act more quickly than a two-per-cent., showing that the chief agent is the alkali, and not any antiseptic principle. The same method may be applied for purulent otitis, etc. — *British Medical Journal*, June 13, 1898.

SOME REMARKS UPON A NEW MYDRIATIC.

STEPHENSON says that the claims of ephedrine hydrochloride as an agent for dilating the pupil have been before the profession for several years, but apparently without attracting anything like general attention. The first communication upon the subject was made by a Japanese physician, Kinnosuke Miura, and this was soon followed by papers from the pens of J. Inouye and A. de Vriese. From these contributions, however, it was clear that the dilatation of the pupil induced by ephedrine was of moderate extent only, although it possessed the great practical advantage of passing off rather quickly (in from one to twenty hours). Later it was found that the action of ephedrine could be enhanced by the addition of a trace of homatropine hydrochlorate in the proportion of a hundredth part of the latter to one part of the former substance. This observation has led to the combination of the two medicaments. The new agent, which is known as "mydrin," is a white powder, readily soluble in water. Its physiological action has been reported upon by Groenouw in Germany, by Suker in America, by Cattaneo in Italy, and by Mr. Simeon Snell in England. These various observers find that a ten-per-cent. aqueous solution when dropped into the eye has the power of dilating the pupil moderately within a few minutes, without affecting accommodation in the least. They also agree that the action of the pupil to light is to some extent retained while the eye is under the influence of the drug, the effects of which pass away within from four to six hours. In no instance have they seen any irritation or inflammation result from the application. Groenouw, who experimented on one hundred patients, found that the dilated pupil had an average diameter of 5.6 millimeters. Suker speaks of mydrin as "an ideal mydriatic for diagnostic purposes," and Mr. Snell's experiences appear also to have been equally favorable.

These claims seem too strong to be set on one side without investigation. Accordingly for some time past the author has used a ten-per-cent. watery solution of mydrin for the purpose of dilating the pupil, when he wished to explore all parts of the fundus oculi with the ophthalmoscope or to examine the cornea carefully in order to ascertain the presence or absence of slight changes Moreover, for the purpose of more exact study he has recently taken twenty patients and noted in each one (*a*) the near and distant sight, and (*b*) the diameter of the pupil. A single drop of mydrin solution (ten-per-cent.) was then placed in the conjunctival sac, after which the following points were observed: (*a*) the time at which the pupils became

dilated; (*b*) the transverse diameter of the pupils; (*c*) the near and distant vision; and (*d*) the time at which mydriasis passed away.

The results obtained in this way may be thus briefly related: The pupil became dilated in a period which varied, according to the individual, from fifteen to sixty-eight minutes, the average of the twenty observations being 29.35 minutes. The mydriasis was found to ensue more speedily if patients kept their eyelids closed after the application had been made. Owing to the fact that the iris did not completely lose its action to light, there was some little difficulty in measuring the size of the dilated pupil, the transverse diameter of which ranged from 5 to 7.5 millimeters, and averaged 6 millimeters. For a similar reason it was not altogether easy to say with precision when mydriasis had passed away. But in no instance did the maximum time (after full dilatation) exceed four hours, while the minimum stood at seventy-five minutes. The average worked out at 184.84 minutes—that is to say, a trifle more than three hours. In no case did sight, either for distant or near objects, show any alteration when the eye was fully under the influence of mydrin, a remark which applies also to the position of the punctum proximum. Lastly, it is practically important to note that the agent set up neither discomfort nor irritation.

As the result of his observations the writer has reached the conclusion that mydrin is capable of doing all that writers have claimed for it—namely, that it causes a moderate dilatation of the pupil without involving the function of accommodation. It cannot but prove, therefore, a valuable agent in the hands, not only of the ophthalmic surgeon, but also of the physician, who must often be desirous of exploring the fundus oculi with a dilated pupil.

SURGICAL SHOCK.

In the *Memphis Lancet* for July ESTES tells us that the recognition of the essential anemia of the brain as the constant pathological factor in shock gives the key to the treatment. The endeavor should be primarily to restore the blood to the brain. As this cerebral condition in psychical shock and in concussion has been produced by the inhibitory action through the pneumogastric by a violent irritation of the medulla, the vasomotor system must of necessity also be violently affected, as the medulla is the center of the vasomotor nerves. After lowering the head and placing the person in a recumbent position to obtain at least a small quantity of blood for the brain, the next indication will be to excite the action of the sympathetic nerves in order to restore the tone to the heart. Of course, the elementary procedures of loosening the clothing, especially about the neck and waist, and taking care to supply fresh air, must always be observed. Sometimes a quick, violent action of the diaphragm will assist in stirring up the splanchnic and the direct cardiac sympathetic filaments. Hence irritation of the nostrils in order to produce deep respirations or sneezing will do good. Hare recommends an abdominal compress for chloroform poisoning. Direct cardiac stimulants (rarely digitalis), at the head of which stands strychnine, are indicated. Heat to the surface should be applied in order to relax the cutaneous vessels, and friction to the extremities for the same purpose.

Of the greatest importance in cases of psychical shock is it to remove the person from the place or locality which may have excited the dangerous mental condition before he recovers consciousness, else a relapse may occur. In cases of serious injuries it is of the greatest importance to take proper measures to prevent and to control the hemorrhage *during psychical shock*, for very little bleeding will occur until this condition is passed. As almost complete anesthesia exists, an Esmarch tourniquet may be applied, vessels tied, or sutures put in without any disturbance or harm to the patient. In this condition, as soon as consciousness begins to return and so-called reaction begins, an anesthetic, if given, will hasten the reaction and thereby restore somewhat the tone and quality of the pulse. The author thinks these cases have given rise to the contradictory observations of various surgeons who report that in their experience an anesthetic frequently improves the strength of the pulse; hence they recommend undertaking an operation "before the patient reacts from shock." This is a very unsafe recommendation, because if the second stage, acute anemia, has already taken place, any operation which involves the further loss of blood is very apt to be fatal. The safer rule is always to wait with any operative procedure which must be attended with even a small loss of blood.

The treatment of acute anemia is the same as the foregoing, with the full appreciation, however, that this condition is in these cases from an *absolute* as well as functional loss of

blood. Energetic measures must therefore be taken to restore some blood to the brain. The limbs should be tightly bandaged from the extremities upward to drive the blood out of them to the head, the head and shoulders lowered, heat applied externally, and large doses of strychnine hypodermically should be employed. The author has used as much as 0.025 (½ grain) of the sulphate of strychnine in the course of an hour in these cases, and about 0.1 (1½ grains) in twenty-four hours. Caffeine in the form of best black coffee, digitalis, and the aromatic spirits of ammonia he frequently uses. Alcohol, he thinks, does harm rather than good; in late years he has not used it for shock.

Besides the above remedies, a most important indication is to restore fluid to the empty capillaries and veins. Many surgeons use habitually intravenous injections of a normal saline solution, and formerly the author also used it; he was, however, so frequently disappointed in its ultimate action that he has not used this method for some time. He has found far better rectal injections of this hot saline solution. Now it is always a part of his routine practise in cases of shock to use large or frequent rectal injections of this solution. If the patient is in profound shock the quantity injected may be large—as much as two liters—care being taken to use a soft rectal tube and pass it up to the sigmoid flexure, while the patient has his buttocks raised, and then allow the fluid to flow from a douche can or fountain syringe into the colon. In cases of partial or complete consciousness he uses half a liter of the solution, always injected by gravity alone into the rectum, and repeat it in an hour. The transit through the intestinal walls into the blood-vessels is slower, but in his hands much more efficient than intravenous injections.

As soon as the stomach will retain it, as much water as the patient can take should be given by the mouth. A generous fluid diet of a nitrogenous kind should be allowed for twenty-four or forty-eight hours, and then light but frequent feeding of a more solid kind. He thinks major operations should never be attempted, if they can possibly be postponed, during shock. He believes the very good results he has had in cases of extensive acute injuries are due largely to the fact that he has waited until the patient has had time to recuperate somewhat from his acute anemia before operating. In the cases requiring hip-joint amputations for injuries he waited thirty, forty, and about forty-two hours respectively before operating.

In conclusion, the author begs the readers of his paper will not lose sight of its main purpose, through the distraction of possible differences as to the theories advanced. He has tried to prove that shock which kills is a condition of acute anemia; that this operates through the brain, as an anemia of the brain, in depressing *all* the so-called vital processes; and that the proper treatment of shock is in the first place prophylactic, namely, to prevent hemorrhage before operation and during operation, and secondly, to cure shock by restoring blood to the brain as rapidly as possible, and then stimulate the heart by warmth, by good air, by strychnine, and by a normal saline solution injected into the rectum or veins. If all else is forgotten, we must keep firmly and carefully to the idea that the life of a man is in his blood, and in order to save a man's life we must save his blood.

THE TREATMENT OF RUPTURED UTERUS BY MEANS OF GAUZE PACKING.

The *Practitioner* for July, 1898, has an article by MAYO ROBSON upon rupture of the uterus, of interest to us all. Although the obstetric practitioner is accustomed to be brought face to face with trying and anxious complications of various kinds, needing great presence of mind and prompt interference, there is no more formidable accident needing a decided line of treatment than that of ruptured uterus. Where the rupture occurs before delivery and the child escapes into the abdomen, nothing but immediate abdominal section can offer any chance of saving the patient, and in such cases interference, to be of any avail, must be prompt, both on account of the hemorrhage and shock.

Unless the skilled help of a surgeon be immediately available—as, for instance, in a town practise—it would be very unwise to wait for skilled help in the hopes of improvement occurring, as not only will the shock increase, but the continued pouring out of blood into the peritoneum may, even within half an hour, render operation hopeless.

The author thinks it is not fully realized how few special instruments are necessary in order to perform hysterectomy under such circumstances. While the surface of the abdomen is being washed and other arrangements made, a skein of silk or thread, a piece

of baby-bottle tubing, a knitting-needle, and the instruments which an obstetrician will always have with him—viz, a needle, a knife, and artery or pressure forceps—can be boiled. At the same time a quantity of water may be boiled for lavage of the abdomen, and several handkerchiefs or napkins, to be used as sponges or dressings, can be boiled either with the instruments or in a separate pan.

The abdomen may then be opened in the middle line, the ruptured uterus dragged forward and surrounded by a piece of elastic tubing, which is to be tied tightly around the pedicle above or below the ovaries, according to the site of the rupture, the ends being secured by means of a silk ligature to prevent the knot slipping; the knitting-needle can then be pushed through the uterus from side to side just above the ligature, and the portion of uterus beyond can be amputated. The fetus and placenta, if free in the peritoneum, can then be extracted through the abdominal incision, and the abdomen thoroughly washed out with a solution of salt and water in the proportion of about a teaspoonful to a pint, at about a temperature of 105°, which can be poured from a pitcher by the nurse.

The boiled handkerchiefs will serve to mop out the extra fluid and to remove any clots, but even if a little fluid be left in the peritoneal cavity it will do no harm—probably rather good than harm, as it will be absorbed rapidly by the lymphatics and help to fill the blood-vessels, rendering transfusion unnecessary.

The abdomen may then be closed in the usual way by means of the boiled thread or silk. Thus, if the surgeon and nurse have taken care to thoroughly cleanse their hands, an almost ideally aseptic and safe operation may be done with this scanty preparation.

But there is a class of cases of ruptured uterus where the laceration is in the lower segment of the womb and where the rent occurs during delivery, and is probably only noticed afterward when hemorrhage and increasing shock draw attention to something being abnormal. In such cases there is as a rule more time for consideration, as the shock, though great, may not be immediate, and the hemorrhage may not be so violent as to produce immediate collapse.

A simple vaginal examination may not discover the rupture, as the lower segment of the cervix is not necessarily torn; but if the finger be passed within the patulous os, the rent in the uterus will be felt and the symptoms explained.

It is a great question whether in many of these cases hysterectomy is the better operation, and in a discussion at the Obstetrical Society of London, 1897, a speaker said that in two cases in which, under similar circumstances, he had seen the operation done the patients had died on the table, and the only ones that recovered were those in which packing with iodoform gauze had been done.

The following case exemplifies the advantages of gauze packing: Last year the author received a telegram from a medical friend, asking him if he could come at once to assist him with a case of uterine hemorrhage following an abortion at the third month, in which some difficulty had been experienced in removing the ovum, and the cervix had been dilated with Barnes's bags. On arrival he found the patient blanched and suffering from shock, though the external bleeding was not sufficient to account for the symptoms. On examination the vagina was found intact, as were also the os and cervix; but on pulling down the cervix by means of vulsellum forceps, and passing the finger through the patulous os, it readily passed through a considerable rent in the uterus, direct into the peritoneal cavity. The abdomen was a little distended, and on pressure being made over the hypogastric region, blood was forced through the rent and escaped through the vagina. With scissors he divided the portion of the cervix between the laceration and the vagina, so as to get thoroughly at the rent; but he found it to extend so far up the uterus that it was impracticable to apply sutures to effectually occlude it. He therefore had the edges of the laceration held apart, and after curetting and washing out the fundus of the uterus, and compressing the abdomen so as to force all the free blood possible out of it, he packed the laceration very thoroughly with long strips of iodoform gauze, several yards being used, the packing filling the pouch of Douglas, the whole of the laceration, and the upper part of the vagina. A firm pad was applied above the pubes and kept in place by means of an abdominal bandage. The packing was changed on the third day, and after that every second day. No further bleeding occurred, and no peritonitis ensued. Recovery was slow but uninterrupted, and the patient is now perfectly well.

This case exemplifies well the hemostatic value of gauze packing in a ruptured uterus,

a means at once simple and safe, and one which is always available even if only used as first aid, but which will often, as in the case referred to, carry the case to a successful issue without further treatment.

A packet of iodoform gauze goes into small compass and should form one of the components of every obstetrical bag, as the author feels sure it does of every surgeon's instrument case. He has found it convenient to carry his iodoform gauze in strips about one inch broad, already cut for use, stored in a convenient celluloid case; this occupies a small compass in his bag, and is always clean and ready in case of need.

THE EXERCISE TREATMENT OF LOCOMOTOR ATAXIA.

The treatment of locomotor ataxia by exercises calculated to teach the patient again the coordination of muscles that has been lost by degeneration of the lower sensory neurons has recently attracted considerable attention, and has won for itself the support of many neurologists, among whom may be mentioned Leydon, Jolly, Mendel, Eulenberg, Oppenheim, Gerhardt, and Remak. This method of treatment was first introduced by Frankel and has for its prime object the conversion of the simplest ataxic movement into a normal one.

In a communication to the *Deutsche Medicinische Wochenschrift* of December 17, 1897, Frankel, describes the various exercises for the hands, arms, body, and legs. For exercising the upper extremities the following directions are given: Sit in front of a table, place the hand upon it, then elevate each finger as far as possible; raise the hand slightly, extend, and then flex each finger and thumb as far as possible; do this with the right and then with the left hand. Touch with the end of the thumb each finger-tip separately and accurately; then touch the middle of each phalanx with the tip of the thumb. Sit at the table with a large sheet of paper and a pencil; make a dot at each corner of the paper and one in the center, and draw lines from the corner dots to the center dot, first with the right and then with the left hand. Put ten coins on the paper, pick them up and place them in a single pile, first with the right and then with the left hand.

For the body and legs, sample exercises: Sit in a chair, rise slowly to erect position without help of cane or arms of chair; then sit down slowly; stand with cane, feet together; advance left foot and return it, then the same with right. Walk slowly ten steps forward and five back with help of canes. Stand without cane, but with feet a little apart and the hands on the hips; in this position stoop down by flexing the knees, and rise slowly. Stand without cane with the feet separated; raise the hands from sides above the head; carry them downward and forward, and try to touch the toes. Walk along a fixed line on the floor by help of cane, placing each foot in turn on the line; then repeat without using the cane. Most of these exercises should be repeated several times, and the movements should be made with the eyes both open and closed.

Owing to disturbance of the sensory paths tabetics have lost the sense of fatigue, so there is some danger in overdoing the treatment. Two things are therefore insisted upon: first, every movement must be done with the greatest possible exactitude, since it is not simply physical exercise that is aimed at so much as training in coordination; and second, the séance should not last more than eight or ten minutes, and no more than two should be allowed a day.

In the preataxic stage the exercise treatment has in a number of cases prevented the development of incoordination. Even in advanced sclerosis remarkable results may be obtained; in a number of instances patients, bedridden for three, four and five years, have been taught to walk without assistance. The improvement may last for years, if the disease is stationary or only slowly progressive. According to Frankel the treatment is absolutely contraindicated in cases of acute or subacute ataxia.

Kalinin (*Vratch*, No. 7, 1897), who has used Frankel's method in five cases of locomotor ataxia, draws the following conclusions: By this treatment the loss of motion can be restored to a satisfactory degree, the gait and locomotion gradually becoming safer and firmer. The sense of locality and that of movement, and the skin sensibility, are but little improved. Romberg's symptom very soon became less pronounced. The duration of treatment should entirely depend upon the prognosis and the degree of motor disturbances present, but in any case it should not be less than a month. No ill effects were observed when the treatment was interrupted at short intervals of two or three weeks, but not longer.

Raichline, who has treated twelve cases

with complete success in eight, concludes that the conditions of success are a long, as opposed to a short, course of treatment, a well nourished condition, good sight necessary for watching the movements accurately, a certain amount of energy and intelligence, not complete loss of sensibility, and the absence of arthropathies.—*University Medical Magazine*, May, 1898.

THE REMOVAL OF FOREIGN BODIES FROM THE UPPER AIR-PASSAGES.

In a recent issue of the *Post Graduate* RICE gives directions about this important topic. He describes a patient who said that two hours before he had swallowed a piece of beef bone, and he located it by putting his finger on the right side of the neck lower down than the tonsil, about the level of the hyoid bone. The author thinks that seventy-five per cent. of the foreign bodies that get into the pharynx have passed into the esophagus and stomach by the time the patient has reached the physician. Nevertheless, just as diligent search should be made to locate them. A bone which has wounded the lateral wall of the pharynx leaves a very distinct impression, and the patient is not able to determine whether it is still there or has passed into the food passage—fish-bones, meat-bones, the bristles of tooth-brushes, pins, buttons, coins, and the different things found in the lower pharynx or larynx. We will save time if we first spray a four-per-cent. solution of cocaine all over the middle pharynx. First use a tongue depressor and examine the pillars of the pharynx and tonsils very carefully, as bones are frequently caught in these. The tongue may be depressed so low that the top of the epiglottis can be seen without a laryngeal mirror. Examine all this surface. Now use a laryngeal mirror and see if possibly a small bone is lodged between the base of the tongue and the sides of the pharynx. We will have to look very carefully to discover the bristle of a tooth-brush, or a very fine fish-bone; they appear no more prominently than a white line, in the laryngeal mirror.

If the foreign body cannot be seen in the middle pharynx, examine the larynx very carefully. If it is in the larynx we shall have such laryngeal symptoms as coughing, huskiness of voice, and possibly difficult respiration. Another location should not be neglected, and that is the pyriform sinuses. The author removed a large wooden toothpick from the right pyriform sinus a short while ago. The patient had been whittling this piece of wood, and putting it in his mouth, inadvertently drew it into his throat. This could not be seen with the mirror during ordinary respiration, but only when the patient made extraordinary inspiratory efforts.

Once the foreign body is located, we should be able to remove it without much difficulty. Laryngeal forceps with a short bite are more easily applied than those with long opening blades. Every man who does throat work should have at least two pairs of these narrow opening forceps, one opening anteroposteriorly and the other laterally. The difficulty with most all these forceps is that the length, which is bent downwards, is too short, and the curve is not apt to be exactly right.

In speaking of laryngeal applications, the author said that the applicator to reach the vocal cords should certainly be bent down three and one-half inches, and oftentimes four inches. This is also true of the proper length of laryngeal forceps. If a foreign body has entered the food passage it will, as a rule, pass safely into the stomach. We may endeavor to locate it by introducing the finger and then later carefully using some variety of probang, such as the umbrella probang or the ingenious coin-catcher. Foreign bodies, if left to the judicious management of Nature, will often do less harm than if they are handled by the too enthusiastic practitioner.

THE USE AND ABUSE OF HYPNOTICS IN INSOMNIA.

The use of hypnotics in insomnia is simply the use of symptom remedies; insomnia is a symptom, not a cause of disease nor a disease. Sleep is essential to the welfare of the organism in the same sense that food is. Deprivation of one or the other causes death in about the same period of time.

The use of hypnotics, therefore, should be temporary while the underlying cause of the insomnia is being removed or palliated. Nor, indeed, is it well at the outset to employ hypnotics without trial of other measures. Aside from the removal of somatic causes for sleeplessness, various general methods may be employed. One of the best is a bath at 104° F. for five minutes. The general cutaneous vascular dilatation, increased by rubbing with a coarse towel, is frequently followed by a good night's rest. Warm liquid food, as a glass of hot milk, or a bowl

of soup, will often give satisfactory results. In fact, some of the hypnotics which, on account of their insolubility, must be given in considerable quantities of hot liquids, owe not a little of their reputation to the vehicle in which they are administered. In debilitated individuals, a glass of stout or whiskey in hot water (hot Scotch) may work wonders. In tired subjects, strychnine sulphate in moderate doses acts as a hypnotic, not because it makes a too tired individual just tired enough to sleep, as a distinguished professor of medicine would have it, but because strychnine dilates arterioles. Sometimes stimulation of the emunctories, as by sodium sulphate, again in hot water, taken at night, will be followed by sleep, particularly in gouty subjects, not because it is hypnotic, but on account of its action on liver, intestines, and kidneys. Methods which relieve pain—position, topical applications—are hypnotic.

Sleep is accompanied by cerebral anemia and systematic cutaneous vascular dilatation. Any method which produces these effects will tend to the production of sleep. When these all fail, and often they do, hypnotics must be resorted to. The safest only should be chosen; they are chloralamide, pellotine, paraldehyde, and trional.

The abuse of hypnotics comes from two sources: (1) careless and ignorant physicians, and (2) conscienceless prescribing druggists. The careless physician prescribes for the symptom insomnia, little caring whether it be due to cerebral degeneration, organic cardiac disease, obstructive pulmonary disease, latent gout, or functional intestinal derangements of hysteria. The ignorant physician uses opium or its alkaloids, not knowing that these are narcotics, clubs a patient into insensibility, and calls it sleep. Here commences the opium habit, or, not believing in "new-fangled" remedies, he keeps closely to chloral, and either adds to the list of chloral fiends or terminates the life of one who is suffering from an unrecognized heart lesion, the cause of the insomnia. Or, again, he may be a therapeutic nihilist—a polite name for the therapeutic ignoramus—and finding that drugs when administered by him have but slight beneficial effect, concludes that they have none at all, launches out with a combination of drugs, and succeeds in making his patient sleep because, with all functions overwhelmed, he can do nothing else.

The dangers of hypnotics are immediate (death) or remote (interference with nutrition). The possibility of habit is always to be borne in mind. Druggists are responsible for a large share of the abuse of hypnotics. They openly prescribe hypnotics in doses far exceeding those considered safe, and further, repeat prescriptions containing hypnotic drugs even when the prescription distinctly forbids it. In England sulphonal is sold as openly and carelessly as are the ordinary necessaries of life. With equal ease coffee can be purchased for breakfast and sulphonal for bedtime. The same is true in this country.

The only remedy lies with the physician. Let him study his materia medica, learn his therapeutics, and apply intelligently what he has learned. Then, and then only, may we get the best results with the fewest disadvantageous symptoms, do the most for our patients, and, after all, rest with a consciousness of duty well performed.—*Post-Graduate*, May, 1898.

PRESCRIPTIONS FOR ACNE.

The following prescriptions are given in the *Klinische Therapeutische Wochenschrift* of June 15, 1898:

℞ Pure resorcin, ½ drachm;
Zinc oxide, 40 grains;
Terra silica, 7 grains;
Benzoated lard, 2 drachms.
Apply to the part twice a day.

Or,

℞ Beta-naphthol, 2½ drachms;
Precipitated sulphur, 2 ounces;
Vaselin and soft soap, of each 1 ounce.

This is to be rubbed on the face for fifteen or twenty minutes daily and afterwards to be removed and the part dusted with talcum powder; or we may use:

℞ Precipitate ointment, 1 drachm;
Subnitrate of bismuth, ½ drachm;
Ichthyol, 30 grains;
Vaselin, 6 drachms.
Apply at night.

THE AFTER-TREATMENT OF NASAL OPERATIVE WOUNDS.

The *Post-Graduate* in a recent issue has an article by Dr. RICE upon this topic. He speaks of the importance of this subject, but covers the ground quickly. It is important that the nasal chambers should be as clean as possible before the operation. We have in mind, in this connection, principally wounds of the nasal septum made by cutting. A simple method of cleansing the

nose before making an incision is to spray with one- or two-per-cent. solution of cocaine, which reduces all swelling, and then the nostrils can be washed with the nasal douche cup and Seiler's antiseptic tablets, or Dobell's solution, or the nostrils sprayed with weak solutions—1 to 10,000 of mercuric bichloride, or of peroxide of hydrogen twenty-five per cent. Washing the nose before operation is reasonable, rather than absolutely necessary, because it is not possible to get the nasal chambers in an antiseptic condition.

The second important rule to be followed is never to leave a nasal operation uncompleted. Any piece of cartilage or bone, half detached, which is allowed to remain, furnishes a pocket, prevents proper drainage, and uncomfortable septic symptoms will surely follow. There are a good many difficult cases where we are required to remove cartilage and bone, but we must take the time necessary to leave a smooth surface, even though we have to apply cocaine, and work at the removal of the tissue several times during the one visit of the patient. If the tissue is removed in a cleanly, thorough manner, there will be no further trouble. In nineteen cases out of twenty, even if a small artery be cut into, bleeding ceases spontaneously after a few minutes. Keep the patient at your office until the bleeding has subsided. The patient is then instructed to blow the nose thoroughly to remove any pieces of cartilage or bone and the blood-clot which has formed. Then the nostril, and, in fact, both nostrils, may be filled with the compound stearate of zinc and boric acid powder. This is the protective covering which the author has found most useful in preventing septic absorption through the wound, and it should be insufflated into the nostrils twice a day, or three or four times after the cutting. He does not approve at all of washing the nasal chambers after operating, as it prevents healing and keeps the surface exposed to septic influences. The majority of cases of operation will do best by using the zinc and boric acid powder for a week or ten days after the cutting.

If the patient is kept at the office for half an hour after the operation we shall not be surprised by any secondary hemorrhages on the street. There are a few cases where the bleeding is so persistent as to require a tampon of some sort, but these are very few, and the case is always complicated by the use of any plug, because of the much greater probability of septic manifestation. But if an artery continues to bleed, we must either insert cotton or gauze wet with some styptic solution, or apply the galvano-cautery point. It is difficult to apply the cautery where there is a great deal of blood, and we do not like the wound made by the cautery where the saw has been previously used. We should say the best method is to insert sterilized gauze moistened with a styptic solution.

There is not much use of removing the tampon before forty-eight hours have elapsed. When it is removed, the nasal chambers should be washed with an antiseptic solution and the wound covered with the boric acid powder. Leave a nasal wound alone as much as possible. The results of the procedure just described are, in the author's experience, very satisfactory.

APPENDICITIS.

The editor of the *Louisville Journal of Surgery and Medicine* for July, 1898, says that in the previous issue, in a few words, notice was made of the fertile subject of appendicitis. The discussion of the papers on this subject in the Surgical Section of the American Medical Association, at Denver, was telling emphasis to the criticism made. Careful, clear-thinking, experienced heads insistingly declared for opposing views, while there was the usual corroboration of both sides by the less weighty and less informed. Not a little of the spirit shown was sharp, probably bitter, and possibly at times even personal. We are all somewhat prone to defend our own views, and seek the bubble, reputation, with our own mouths. It was a question if the discussion did any good; it is almost a certainty that it did harm. Radicalism fails to convince the courageous conservative; it leads to danger the incompetent and vacillating; it discourages and routs the expectant and hopeful. In questions which involve not only life and death, but as well the reputation of the surgeon, the consent of the patient, facilities for success, etc., the theoretical must yield to the practical. Even if we accepted the dictum that a tender appendix should always be excised—though a congested liver, a painful kidney, a swollen spleen, an inflamed intestine may be allowed to declare its course—there must arise the reflection that practically such radicalism can never become popularly accepted, hence to urge it is to discourage rather than promote concert of action. In principle it is true that an

offending appendix is better out, not because it is always a source of danger, but because no judgment can declare when it is not; but in practise it is equally true that the best interest of the patient cannot always be served by radical adhesion to fixed laws.

Here, as elsewhere, the survival of the patient is through the fittest of conditions. These conditions must be controlled by the judgment of the surgeon. To obtain definite data, a point of departure must be agreed upon. It is clear not ten surgeons in this country operate on all cases of appendicitis as soon as the diagnosis is made, however much they may desire to do so. Many of the remainder who follow these ten in theory are far behind in practise. The immense majority are conservative in practise, whatever may be their theory. The general practitioner is utterly unconvinced. Between these two extremes is fixed the great gulf of death from indecision and neglect.

An eminent operator said in this discussion: "There can be no compromise!" But is it true? Do not arbitration, concession, daily and hourly in our lives protect and strengthen both our dignity and our security?

Not only is a compromise advisable, but at present it is unavoidable, and is entered into every day by the very radicals who oppose it.

The general practitioner having arrived at a diagnosis will rarely willingly call into consultation the surgeon who he knows has already made up his mind; who he knows will not *consult* with him, but will dictate an operation in a lesion he himself admits will recover without it three times out of four. Such uncompromising absolutism not only humiliates the physician, but scares both him and his patient away till the time of safety is past.

Though it is true in skilled hands, under favorable conditions, an operation in all cases at the time of diagnosis will probably secure the highest rate of recovery, yet it is true this course is so impracticable we must seek the most acceptable compromise upon which common ground the best results can be secured. This ground we believe to be about the following, as laid down by the writer in a discussion of this subject before the Tri-State Society at the Nashville meeting in November, 1897:

1. All cases which are of the so-called fulminating form demand immediate operation.

2. Primary cases with moderate pain, temperature and circulation may (not always with safety) be watched for twenty-four to thirty-six hours. If not improved or stationary after this time, operation should be insisted upon.

3. In recurrent cases more circumspection is demanded and little delay permissible.

4. Trial of operation should not be refused even in general septic peritonitis from appendicitis.

The editor is constrained to say again, as he said in the last issue, that the achievement of better results in appendicitis lies less in the line of improved surgery than in the education of those having the case first in hand. When the family physician, anxious for the welfare of his friend, the patient, and uninfluenced in nine cases out of ten by either prejudice or jealousy, clearly understands the essentials of pathology and is assured that certain easily ascertained symptoms and conditions demand a defined step which the best hope and prospect attend, then and then only will imperfect cures and the unnecessary mortality of this frequent and terrifying lesion be reduced to the minimum.

THE TREATMENT OF INCONTINENCE OF URINE IN CHILDREN WITH THE LIQUID EXTRACT OF RHUS AROMATICA.

In a recent issue of *Treatment* we find that FREYBERGER has used this drug with great success. He gives us a brief summary of the thirty cases of enuresis which he has treated with rhus aromatica.

In all cases spoken of as "cured" at least nine months have elapsed since enuresis had occurred for the last time.

Of the thirty patients treated with rhus aromatica, twelve are boys and eighteen girls; their ages vary from three to eleven and a half years.

At the time when treatment was begun one child suffered from anemia, two from rickets, one from rheumatism, two from chorea, five from morbus cordis, five from large tonsils and adenoids, one from somnambulism, one from pulmonary tuberculosis, and one was microcephalic; while in eleven children no concomitant affection could be found.

One boy suffered from diurnal enuresis; five boys and fifteen girls presented the combined (or continuous) form of enuresis.

The average duration of the treatment was forty days—thirty-five days in boys and forty-five in girls.

The first signs of improvement occurred

on an average on or about the seventh day of treatment; the earliest on the third, the latest on the twenty-third day.

Thirty-three days on an average were sufficient to produce a permanent cure, fifty-three days to effect a permanent improvement.

Eleven boys and seven girls were permanently cured; one boy and nine girls were permanently relieved; in two girls no improvement could be achieved. A relapse occurred in three girls after an interval of some months.

A temporary exacerbation of the enuresis was noted in eight cases, three boys and five girls; it occurred during or towards the end of the first week in five cases, and during the second week in three cases. While this exacerbation lasted the patients not only wetted their beds two or three times every night, but the quantity of urine passed into the bed each time was considerably increased. This interesting, though somewhat unpleasant, phenomenon lasted from four to six days, and in all cases terminated rather abruptly. During this period of flooding the urine was always very pale; its specific gravity varied between 1002 and 1007. Considering the great disappointment which parents must necessarily feel at this apparent change for the worse, the author made it a rule to tell the parents beforehand that such a recrudescence might possibly occur, but that it would not last long, and in all probability would soon be followed by a decided improvement.

It would be rash to claim for rhus aromatica the qualities of a specific in the treatment of enuresis in children as long as our knowledge of this drug and its action is based upon the results observed in barely one hundred cases on which reports have been published; but so much may be said in its favor that it appears to be as efficacious as belladonna, that it may be given for however so long without the slightest ill effect, and that good results may be obtained with it where belladonna proves ineffective.

The astringent taste and disagreeable odor of the liquid extract of rhus aromatica are sufficiently disguised by syrupus aromaticus.

The dose employed was: Five to ten minims for children two to five years old; fifteen to twenty minims for older children.

A very convenient formula is the following:

℞ Ext. rhois aromaticæ fl., 10 minims;
Syrup. aromatici, 20 minims;
Aq. distillatæ, ad 1 drachm.

S.: This amount to be given three times a day.

THE SALICYLATE OF METHYL IN THE TREATMENT OF RHEUMATISM.

CATRIN in the *Journal de Médecine de Paris* of June 11, 1898, thinks that the usefulness of salicylate of methyl in relieving the pain of acute articular rheumatism is incontestable. It relieves the pain in his opinion more rapidly than does the salicylate of sodium, although it does not reduce the fever as does the latter drug. In his experience it has been an infrequent occurrence to find that the drug materially disordered the stomach. The doses which he commonly employs are stated to be as much as one ounce a day, but we doubt very much whether the ordinary case could possibly ingest this quantity.

In regard to the use of the salicylate of methyl locally, the author thinks that bands of tarlatan soaked in salicylate of methyl may be wrapped around the joint and covered by an impermeable dressing, with great advantage to the patient.

STRYCHNINE IN ALCOHOLISM.

FEDEROFF (*Revue de Thérapeutique Médico-Chirurgical*, June 1, 1898) has used strychnine in twelve cases of alcoholism with the following results: He believes that the catarrhal processes associated with this condition are rapidly ameliorated and that neurasthenic tendencies are favorably influenced. Thus insomnia and other grave nervous troubles rapidly disappear, the strychnine seeming to produce sleep, so that the patient rested an ordinary length of time for five or six days. The strychnine also seemed to dissipate the nervous unrest of the patients, relieve the pains of which they complained, and in this way aided in producing a cure. To this extent he believes that strychnine is a cure for the alcohol habit, but he does not think that it has any definite specific influence. [This conclusion we think to be correct.—ED.]

EXTRAORDINARY CASE OF HORSE-BITE; THE EXTERNAL EAR COMPLETELY BITTEN OFF AND SUCCESSFULLY REPLACED.

The following interesting case is reported by Dr. BROWN in a recent issue of *The Lancet:*

On March 2, 1898, at about 4.30 P.M., when present at an auction, he was asked to attend to a boy, aged fourteen years, whose ear had been bitten off by a vicious horse. He presented a hideous appearance, the greater

portion of the pinna, together with a semicircular flap of an inch radius from behind the ear, having been bitten off, leaving only the tragus with a quarter of an inch each of the helix and lobule. Although the case looked so hopeless (as regards disfigurement) he determined to make at attempt to save the ear, as the patient could be no worse off if the attempt failed. He asked for the ear, and after about ten minutes' search it was brought to him, having been found near the horse in the stable yard. It was of a dirty drab color and the posterior flap was curled up in a roll. He had no instruments or dressings with him, and it would have taken half an hour or more to procure them, which delay would have rendered the attempt to preserve the ear useless. He therefore procured some common needles and thread, and after washing the ear in warm water he proceeded to sew it on by inserting a suture above and another below, followed by three behind and three before. The posterior flap had to be unrolled before he could stitch it, and owing to the needles being straight there was great difficulty in placing the sutures in the concha and the fossa of the antihelix. He then placed a roll of cotton-wool behind the ear to support it, and having wrapped it in cotton-wool and covered it with a silk handkerchief sent the boy home. As soon after as possible he removed as much of the wool as he could without disturbing the wound, and after dusting the surface with iodoform, wrapped the ear in cotton-wool and Gamgee tissue.

On March 7 he removed the dressings, washed the ear with a warm solution of bichloride of mercury (1 in 1000), dusted the surface with iodoform, wrapped the ear in iodoform gauze, and packed it round and covered it with cotton-wool. On the 10th he renewed the dressings and removed the sutures. On the 14th a small portion of the lobe sloughed away. On the 16th the patient looked rather anemic and felt weak, so he was given a mixture containing sulphate of quinine and tincture of perchloride of iron. The same treatment was adopted throughout, the dressings being renewed every second or third day until April 7, when they were allowed to remain on until the 12th, when the ear was completely healed. The patient's diet consisted of plain food, together with beef tea, eggs, etc. He is a healthy, intelligent lad, who has survived several accidents, his body being covered with scars from burns. On one occasion it was necessary to transplant six skin-grafts from the calf of his leg to his thigh to replace skin which had been destroyed by burns.

This case, the author considers, shows what valuable results may be brought about by antiseptic treatment and making prompt use of whatever comes handy when the proper instruments, etc., are not available.

THE INFLUENCE ON THE BLOOD OF SYPHILITICS PRODUCED BY INTRAVENOUS INJECTIONS OF MERCURY.

In *La Presse Médicale* of May 18, 1898, LINDSTROEM contributes an article upon this subject. He believes that intravenous injections of mercury are of very great value when it is necessary to put a patient under antisyphilitic treatment of a heroic character. After quoting a good deal of the literature on this subject he proceeds to give us the results of his treatment. Thus in one case, a soldier twenty-five years of age suffered from a chancre, followed by a discrete roseola. Thirteen intravenous injections were practised. Seven of these consisted in the use of one-sixtieth of a grain of corrosive sublimate. In six others one-thirtieth of a grain was used at an interval of six days. Under this treatment the quantity of the red cells increased 500,000 after the early injections, and this augmentation increased as the injections were continued. After as much as one-twentieth of a grain was injected the corpuscles rose to 6,620,000, but after the injections were stopped the quantity of the red cells diminished considerably. Along with the augmentation in the quantity of the red cells there was a coincident diminution in the intensity of the syphilitic eruption. When subcutaneous injections of benzoate of mercury were used the number of red cells did not increase as they did after intravenous injection. The quantity of hemoglobin was increased and continued to increase under the intravenous treatment. The white cells were decreased in number by this treatment. The ordinary flow was increased by intravenous injections and the quantity of urea equaled one and a half ounces a day, but after the seventh injection diminished in quantity.

In regard to the elimination of mercury the author found that it commenced in two hours after the intravenous injection, the maximum occurring after eight hours. An analysis of urine after twenty-four hours showed the

presence of mercury. He therefore concludes that minute doses of mercury introduced directly into the blood increase the quantity of hemoglobin in the red cells, diminish the white cells, but do not very materially influence the syphilides. In still another case a patient of twenty-two years, with an intense roseola and polyadenitis, received subcutaneous injections of corrosive sublimate, thirty-one being given during the space of forty-five days. Under the use of these subcutaneous injections the red cells markedly increased, but equally good results with intravenous injections did not seem to be obtained.

After quoting other cases this author concludes that the direct introduction of mercury into the blood exercises a most useful influence and that improvement takes place almost at once. Small doses should be given at first and gradually increased. If, however, too large doses are used, or it is continued too long a time, mercurial anemia may develop. In severe cases, therefore, it would seem that this method of treatment is advisable. It is hardly necessary to add that careful antiseptic precautions should be maintained.

THE THYROID THERAPY.

The *Northwestern Lancet* of June 15, 1898, has in it an article on Thyroid Therapy by HALDOR SNEVE. The conclusions which he reaches are as follows:

1. The thyroid gland produces a secretion of the greatest importance to the metabolism of the body. Absence of function produces cretinism if congenital, myxedema if acquired.

2. Simple hyperplasia (simple goitre) does not produce marked pathological disturbances, but the writer believes it to be a larvated form of exophthalmic goitre, and that so-called "nervousness" can be found in the vast majority of cases.

3. Hyperplasia associated with disturbance of the cervical sympathetic is the disease known as exophthalmic goitre.

4. Surgical interference in diseases of the thyroid gland should be limited to the removal of neoplasms; thyroidectomy in exophthalmic goitre is unphysiological, irrational, and dangerous.

5. In the majority of cases of exophthalmic goitre, medicinal hygienic treatment, rest, galvanism through the neck (two to five milliamperes), tonics, sodium phosphate and thymus gland will effect amelioration. In cases refractory to medical treatment where life is threatened, section of the cervical sympathetic should be practised.

6. Many cases of neurasthenia are cases of masked exophthalmic goitre and should be treated accordingly.

7. Thyroid therapy is specific in sporadic cretinism, myxedema, and simple goitre, and removes obesity.

8. Thyroid extract increases the unpleasant symptoms in exophthalmic goitre, and is a reliable test also in the masked form of this disease.

THE TREATMENT OF HEMORRHAGIC NEPHRITIS.

The *St. Petersburger Medicinische Wochenschrift* of May 16, 1898, contains an article by KRAMER, of Dorpat, in which he mentions the dietetic and hygienic treatment of chronic hemorrhagic nephritis and the use of ergot, tannin and citric acid for excessive hematuria. He then goes on to describe how he has used methylene blue with advantage in such cases, and cites a case of a man of sixty-four who came to him suffering with swelling of the lower extremities, loss of appetite, feeble heart, and the dark red colored urine due to the presence in it of blood coloring matter. Tannin, calomel, acetate of lead and salol did not exercise any favorable influence. Kramer then decided to give the patient methylene blue, using two to three grains once, twice or thrice a day. As a result of this there was a decrease in the hemorrhagic evacuation and in the quantity of albumen which the urine contained. He detailed three other cases in which a similar method of treatment was resorted to with advantage and believes that methylene blue is our most efficient agent in controlling rapidly and absolutely the blood in the urine.

THE GOOD EFFECTS OF IODIDE OF ARSENIC IN INFANTS SUFFERING FROM SCROFULOSIS.

The *Journal de Médecine de Bordeaux* of June 19, 1898, contains an article by SAINT-PHILIPPE upon this subject, a subject which is well known to medical men in general. He points out that under the use of the iodide of arsenic improvement takes place in the condition of the skin, the mucous membranes, the various viscera, and finally that the glandular condition is ameliorated. Even in those forms of skin disease which are infectious, as for example impetigo, he finds that the use

of iodide of arsenic is of great value. He prescribes it in the following form:

℞ Iodide of arsenic, 7 grains;
Distilled water, 1½ ounces.

Dissolve and give 5, 10, 20 or 30 drops of this solution a day, according to the age of the child.

As the remedy is an active one it is wise, in his opinion, to commence with a small dose — for example, only a drop may be given morning and night, and this dose gradually increased. In very susceptible individuals dyspeptic symptoms may arise and slight nausea may develop; diarrhea may also come on, and in this case the dose must be cut down.

THE TREATMENT FOR INTESTINAL WORMS.

In the *Revue de Thérapeutique Médico-Chirurgical* of June 1, 1898, LYON tells us that the patient should have nothing for his dinner or supper save a bowl of milk or soup. The bowels should also be carefully washed out in the evening by an injection and the vermifuge taken, a purgative and rectal injection being used the next morning. He believes that the sulphate of pelletierine in the dose of two to four grains is best given in a mixture containing tannin; thus he prescribes:

℞ Sulphate of pelletierine, 3 grains;
Tannin, 15 grains;
Distilled water and simple syrup, 2 ounces;
Essence of orange, 10 drops.

This is to be taken in two doses at half-hour intervals. Ten minutes after the ingestion of the second dose a large draught of Hunyadi water should be taken. Such a prescription should not be given to a pregnant female, nor to very old persons. In other instances the following prescription may be used:

℞ Oleoresin of male-fern, 1 to 2 drachms;
Syrup of ether, 1 ounce;
Mint water, 1 ounce;
Syrup of acacia, 3 ounces.

To be taken in two doses two hours apart. Or the oleoresin of male-fern may be given in capsule with calomel, seven grains of the oleoresin and one grain of calomel to be put in one capsule; twelve to sixteen of these capsules are to be prepared, and two should be taken every ten minutes. One hour after the last capsule is administered a purgative may be given.

Lyon points out the fact, which is well known to therapeutists, that castor oil should not be given after male-fern as it favors the intoxication with filicic acid. For the removal of round worms Lyon advises the use of santonin combined with calomel; two to five grains of santonin may be given with a grain or two of calomel, divided into three cachets. For the removal of seat-worms Lyon suggests injections with salt water, the use of castor oil or of thymol (three grains in two ounces of olive oil). In other instances glycerin suppositories may be used with advantage, or, again, a solution of boric acid may be employed.

THE INFLUENCE OF FORMALDEHYDE UPON DIGESTION.

The remarkable properties of formaldehyde as an antiseptic have caused FINOSSIER to study its value as an intestinal antiseptic and also to determine its influence upon the digestive ferments. In regard to the digestion of starches he took a series of flasks and placed in them ten cubic centimeters of starch-water, to which he added two cubic centimeters of saliva and ten cubic centimeters of a dilute solution of formol. These flasks were then exposed to the temperature of the body. Three hours afterwards it was found that the formol exercised a feeble retarding influence upon the conversion of starch into sugar. In regard to the amylolytic power of pancreatic juice he found that there also occurred a slight retardation. Upon the action of pepsin in converting into peptones considerable delay took place, and concerning a similar action of trypsin the same results were obtained. Upon the coagulation of casein formol exercised a distinct inhibitive influence: thus in the proportion of 1.5 in the 1000 the time necessary for coagulation of caseation was twenty-five minutes, whereas when no formol was used it was but two minutes. It would seem, therefore, in general terms that formol exercises an inhibitive influence upon digestive processes, but that this is not sufficiently marked to prohibit its use in those cases in which it seems advisable to administer it as an intestinal antiseptic. — *Revue de Thérapeutique Médico-Chirurgical*, June 1, 1898.

THE INTRANASAL USE OF MEDICATED OILS OR OILY FLUIDS.

A recent issue of the *British Medical Journal* has in it an article by Dr. EWART on this interesting subject. He says that in diphtheria the occasional occurrence of a long period of infectiveness after apparent recov-

ery has suggested an important precaution, that of keeping, throughout the attack and for some time after recovery, the nares protected by some antiseptic and healing application. For some years the writer has made this a rule of nursing in his cases, and carbolized oil (1 in 60) has been systematically introduced either by the swab or by the dropping method. A very small quantity of oil repeated twice a day will suffice. It is not improbable that after the pharynx has cleared itself of membrane some of the infection may linger in the large mucous tract above, especially in the absence of any cleansing treatment, and that in reported instances of late infectiveness the mischief may have really resided in the nasal fossæ. At any rate, it is believed that this precaution, if carried out methodically, might materially diminish the risk of a late transmission of diphtheria during convalescence.

In affections of the nostrils, nasopharynx, and sinuses, the local application of oil does not appear to have occupied the therapeutic position which some of its advantages seem to deserve. It is not referred to in current literature, and does not seem to have been practised with frequency, if at all. This circumstance may have been the result of the only drawback which the method presents, namely, that it is somewhat unpleasant to sensitive persons, and unless used with discretion, apt to nauseate. On the other hand, its simplicity and its efficacy in fulfilling the objects for which it is prescribed are recommendations. Its good results are manifest chiefly where it is locally applied to the mucous membrane affected; but it is also beneficial in those respiratory affections in which the trachea and the larger bronchial tubes suffer jointly with the nose and nasopharynx, and also in some cases of neurotic dyspnea or asthma in which the nose is the seat of irritation. Its action in these cases would be one partly reflex, and therefore distinct from the results obtained by the strictly local method of intralaryngeal injections continued for long periods; moreover, it does not claim to cure the affections in question, but merely to alleviate their symptoms and to obviate the recurrence of attacks.

The same mode of application is suitable to all cases. A small quantity of carbolized oil (1 in 60), flavored with some essential oil such as that of almond or bergamot, is introduced into the nostrils whilst the patient is lying down with the head thrown back. A small glass syringe fitted with a spray nozzle is best, but failing this a common nozzle will answer; or the oil may be simply dropped into one or both nostrils. The patient should be directed to turn the head from side to side to facilitate the spreading of the oil. Where the object is local treatment of the frontal sinuses, it will be necessary to throw the head still further back and to keep it in that position for a minute or two. If the quantity of oil should have been excessive, or if it should have been dropped instead of sprayed, it will trickle down the back of the throat, and this often excites some nausea. The quantity which has generally been used is about a saltspoonful, or fifteen drops, but even a less quantity may be found useful, and the objection stated may then not arise. The oil may be made the vehicle for various remedies. Recently, for instance, in a case of recurring epistaxis, in which the source of hemorrhage was thought by the patient to be in the left frontal sinus, tannin was added to the oil, and the latter was felt by the patient to reach the spot in question. In many cases stimulation is wanted quite as much as, or even more than, mere protection. The author has therefore availed himself of a well known formula:

> Menthol,
> Thymol, āā gr. j;
> Ol. olivæ, q.s. ad ʒ jss.

This has been preferred by some patients to the oil, and in others has been found efficacious where the latter did not relieve the symptoms. The stimulating solution is especially useful in neurotic cases

The conditions in which the local use of medicated oil may be found of value are the following:

In continued pyrexia the drying and caking of secretion in the nasal cavities are a source of much discomfort; the mouth often has to be kept open in consequence, and the dry tongue of fever is the result. In these cases, as in the following, the quantity of oil required is very small provided it be thoroughly applied, and this can be done by introducing a thin swab of twisted cotton-wool or of lint charged with the oil.

Nasal dryness and fetor are also apt to occur in all varieties of continued hurry of breath, but particularly in that which belongs to heart disease with broken compensation. Among valvular diseases, advanced mitral stenosis, with or without associated regurgitation, in which there is considerable venous congestion, is that most often accompanied

by these symptoms. The ozena-like odor was formerly supposed by the writer to be dependent upon some local lesion special to this disease; but it is probably explained simply as a result of permanent congestion and of the drying of a mucous membrane lined with secretion. The comfort to the patient and to the physician arising from this treatment is well worth the small trouble which it gives.

Among the obstructive and nasopharyngeal troubles permanent or progressive structural defects, such as narrowing of the passages, polypi, adenoid growths, etc., are curable only by surgical means. But striking alleviation of any superadded congestion or catarrh may be brought about by the use of oil, which is particularly indicated for impacted foreign bodies. Much benefit may accrue in children suffering from large tonsils or adenoid growths, and from nocturnal restlessness and cough, if the mucous membrane can in this way be kept free from irritative congestion, swelling and dryness, by protecting from the results of open-mouth breathing. The same applies in the adult, where the nostrils are blocked by a polypus or by secretion and swelling.

Dry nasopharyngeal catarrh and granular pharyngitis are both susceptible of much relief. The treatment is specially adapted to cases in which dense, adhesive mucus forms scabs on the pharynx, and leads to the well known distressing symptoms; and as a protecting agent it also may be of much service in granular pharyngitis. Acute catarrhal pharyngitis, if submitted to this local treatment sufficiently early, when the sore, raw feeling, or the stiffness and pain limited to one spot, with which the affection often begins, are first perceived, would probably be manifestly relieved, but there are no cases to report. This might be the means of checking the usual extension of the catarrh to the mucous membrane of the trachea and large bronchi.

Bronchial catarrh of the large tubes, or common chest cold, is frequently the sequel or the concomitant of nasopharyngeal catarrh. This conjunction led the writer to try the treatment in his own case, and he was much impressed by the relief afforded, not only to the nasal catarrh, but to the chest symptoms, including retrosternal pain and rawness, painful cough and expectoration. He has since then observed equally satisfactory results in other cases.

It is difficult to explain how a local application in the nose can relieve the chest, since it is doubtful whether the oil, although spreading so rapidly, can find its way downwards into the air passages. The influence is probably one brought about by associated nerve agencies. If, therefore, we regard the resulting relief as one merely reflected from the pharynx, we can hardly expect that the nasal method will be of much service in bronchitis of the smaller tubes. On the other hand, the direct application of oil might perhaps be of use, and one at least of the cases narrated is an instance of the success of the treatment in the bronchopneumonia of diphtheria. The results noted from the indirect or intranasal method cause us to inquire again whether the more frequent use of intralaryngeal injections might not be of advantage. Hitherto they have been chiefly employed in chronic pulmonary affections; but if directed to the cure of the more acute catarrhs of the large tubes their efficacy might be more manifest, and probably many a protracted chest affection might be avoided or considerably shortened in duration. It may be thought that this is too powerful an engine to apply to small work; but the intralaryngeal injections are really not troublesome to the patient if successfully performed, and their performance presents no difficulty to any one familiar with the laryngoscope.

On the other hand, it would be premature, without previous trial, to recommend intralaryngeal injections in bronchopneumonia, and their desirability in acute bronchitis must also remain an open question till further experience has been gained.

It is well known that in a proportion of cases of asthma the affection is connected with some nasal trouble, usually a congestive hypertrophy of the mucous membrane; and the opinion has been held that asthma itself is a congestion and swelling of the mucous membrane. The late Sir Andrew Clark took that view. Only a proportion of these cases yield to local treatment by the galvanocautery, or to local medication such as that by perchloride of mercury, carbolic acid, and quinine, formerly recommended by Sir Andrew Clark. Among the local methods which might still be resorted to in the unrelieved cases the present one suggests itself for trial.

ACUTE PNEUMONIA IN CHILDHOOD.

In the *Edinburgh Medical Journal* for August, 1898, CARMICHAEL tells us that we have, as yet, no special treatment for acute

pneumonia. The antitoxin has not yet been discovered, but this is a line of research well worthy of attention. All we can do is to treat each patient according to the special needs of the case, meeting symptoms as they arise by rational means. In all cases hygienic measures, including diet, are all-important. The patient should be in a well ventilated room of mean temperature. The author finds a tent-bed invaluable, hung round inside with wet towels sprinkled with eucalyptus or creosote, or other antiseptics. In very severe cases, with much cyanosis, the inhalation of oxygen mixed in the air of the tent often proves of signal benefit. The dieting should be conducted on the general principles applicable to all febrile affections—light, easily digested nutriment, in such quantity as the patient can digest. Overfeeding is harmful, as likely to bring on vomiting and diarrhea, which are complications always to be dreaded. Continuous and routine poulticing is now discarded, poultices being used as other therapeutic means, according to the necessities of the case. A stimulating sinapism occasionally applied all over the chest for half an hour or an hour is often very serviceable, this being replaced by a pneumonia jacket of Gamgee tissue; when the temperature is high and the skin is not acting, a moist continuous poultice of soft flannel and jaconet, moistened with boracic solution, is very grateful to the patient. By keeping up a local as well as general diaphoresis, relief is given to the engorged lung, whose blood-vessels are in a state of hyperemia and permanent dilatation, the cutaneous blood-vessels, which are in the opposite condition of high tension, being thereby relieved.

As no drug yet known has any special influence on the disease, we must treat the patient by endeavoring to assist Nature in her efforts to maintain a compensatory physiological balance in the functional activity of the various organs. In the reference already made, in regard to dieting, the writer has indicated the necessity of due attention to the digestive functions. The respiratory embarrassment can be best relieved by keeping up a continuous local and general diaphoresis, as already indicated. This should be assisted by the exhibition of non-depressing diaphoretics, such as liq. acet. ammoniæ and sp. etheris nitrosi, a combination which has well stood the test of experience. The nitrous ether is most valuable in relieving the general vascular tension apart from that of the lung. Alcoholic stimulants are of great value, especially in bronchopneumonia. They must be administered in suitable doses, according to the exigencies of the case and the state of the pulse. Next in importance as a stimulant the author regards strychnine. The indications for its use are similar to those of alcohol, and it may be given with advantage at the same time. He regards it as of more value in the acute respiratory affections of children than in adults, on account of its action on the cardiac respiratory centers and cardiac ganglia. In children it is well known that the nerve tone is more rapidly lowered from acute disease than in adults, hence the great importance of anticipating this by the timely use of such a remedy.

The use of belladonna in certain cases of acute respiratory affections of infants is one of the most striking therapeutic facts the writer knows of. The cases in which it is indicated are those, particularly of infants, attacked with acute congestive bronchial catarrh in the early stages. It is well known that in these congestive conditions, which are accompanied by more or less bronchial spasm and collapse of the lung, its action in soothing the afferent and efferent nerves in the bronchial walls, and stimulating the respiratory center, is most marked. It has no beneficial effect in the later stages where the alveoli are involved, but its timely use in earlier stages of the disease is attended with striking results.

The author's remarks on the drug treatment of acute pneumonia would be incomplete, he says, were he not to refer to digitalis, and he only does so to condemn its use as a routine remedy. He does not for a moment undervalue the importance of employing this drug in cases where its use is clearly indicated—feeble pulse with weakness of the left ventricle and diminished arterial tension. Such conditions obtain occasionally, but not frequently, in the pneumonia with large lobar consolidation. On the other hand the condition of the arterial system clearly contraindicates its use. The state of the blood-vessels in the affected part is that of distention and paralysis, the systemic arterial circulation being in a high state of tension, with an enfeebled and distended right heart. In such cases we have no proof that digitalis has any power in restoring the tone of the blood-vessels in the affected part. It cannot act on the right heart without more powerfully (on account of the greater muscular area) stimulating the left ventricle to congest the affected lung by

"diminishing the vascular area" (Loomis). Heart failure in lobar pneumonia would appear to be due to two principal causes—the depressing effect of the toxins on the nervous center, and of a high temperature on the heart muscle. If this be so, there are no indications for digitalis, but rather for such remedies as act directly by stimulating the nerve center on the one hand, relieving the local hyperemia on the other. He believes that local and general diaphoresis, occasional purgation, and remedies which stimulate the cardio-respiratory centers, are the most appropriate means of combating this condition.

The use of large doses of phenacetine or antipyrin is in the author's experience not useful, often harmful, in both forms of pneumonia. In small doses, however, they are often of service in allaying nervous irritability and restlessness. In hyperpyrexia we must trust to the wet pack, or tepid bath, or the application of cold by ice-bags, or otherwise.

The author regrets to find that even yet in these more enlightened days such remedies as ipecacuanha, tartar emetic and squills are prescribed by some physicians. There is no indication that he knows of, but a distinct contraindication, for their use. Children suffering from pneumonia require rather stimulation than the exhibition of depressing remedies such as these.

INTRACEREBRAL INJECTIONS OF ANTITOXIN IN THE TREATMENT OF TRAUMATIC TETANUS.

Trustworthy as the antitoxin treatment has shown itself to be as a preventive of tetanus, it is comparatively of little avail once the disease has become established. Pondering on this state of things, some months ago E. Roux and A. Borrel came to the conclusion that the frequent failure of the antitoxin in cases of developed tetanus was due to the failure to catch up with the toxin, so to speak. In other words, they said to themselves, while the antitoxin was floundering about in the blood the toxin was doing its deadly work on the nervous centers; the two, although so close, did not come in contact.

To remedy this defect of the treatment, they reasoned it would be necessary to inject the antitoxin into the central nervous system itself. But the soundness of this view had first to be tested experimentally. Accordingly, forty-five tetanized guinea-pigs were treated with intracerebral injections of antitoxin, and thirty-five of them recovered. Seventeen others were treated with the antitoxin injected simply under the skin, but in far greater amounts, and only two of them survived. Seventeen check guinea-pigs, not treated with the serum, all died. Roux and Borrel reported on this matter at the recent Madrid International Congress of Hygiene. Their theory has now been successfully put into practise on the human subject, a patient of A. Chauffard's, who in conjunction with Quenu reports the case in the *Presse Médicale* of June 18, 1898.

A healthy lad sixteen years old, a gardener, was injured by a greenhouse sash falling on his hand and crushing the tips of the index and ring fingers. This was on the 8th of April. Four days later the lad presented himself at the Cochin Hospital, where he was treated daily as an out-patient until April 22, when he complained of trouble with his jaw and also of a tooth. The dentist found no trouble with the boy's mouth, but suspected tetanus. Nevertheless he prescribed only a carbolized gargle. On the following day the symptoms had become more pronounced, and the patient was advised to enter the hospital. This he did not do at once—in fact, not until the 25th. He then had decided trismus, with the sardonic grin, but the muscles of deglutition and those of respiration were not yet affected; his intelligence was undisturbed, and there were no paroxysms. In the course of the day he received twenty cubic centimeters of antitetanic serum under the skin. On the following day (the 26th) there was well-marked tetanus of the trunk, but the limbs were still free from contracture.

M. Quenu was now called upon to do the operative procedures required for carrying out the Roux-Borrel treatment. The patient's entire head was shaved, asepticized, and protected with a dressing. Anesthesia was induced with chloroform, and M. Quenu made a small curvilinear incision down to the bone on the right side, the middle of the incision falling in a line drawn vertically from the external orbital process and being eight centimeters distant from that process. The concavity of the incision was directed forward and downward. The little flap was dissected up, and a button of eight millimeters diameter was removed. The dura mater was incised, and the hypodermic needle was passed into the brain to the depth of five or six centimeters. M. Roux himself pressed the piston slowly, injecting between one and a half and two cubic centimeters of serum concentrated one-half (ten parts dried and

then redissolved in five parts), which he and M. Borrel had prepared on the spot. The process of injection, drop by drop, occupied about six minutes. No noteworthy phenomenon accompanied it. The cutaneous wound was closed with three sutures, and the same procedure was executed on the left side of the head. Occasion was taken of the anesthesia to treat the injured fingers radically. The entire operation lasted about three-quarters of an hour.

On the lad's emerging from the anesthesia, some improvement was noted at once, but, as is always observed in severe cases of tetanus that end in recovery, whether spontaneously or as the result of treatment, he still had to go through with a long persistence of the manifestations prior to the favorable turn. On the 29th he received twenty cubic centimeters of antitetanic serum, but this time subcutaneously, and the same amount again on the 1st of May; also ten cubic centimeters on May 2, and twenty on the 3d. It was not until the 8th that he showed decided improvement, and he sat up for the first time on the 18th. During all this time the antitoxin treatment was judiciously supplemented with nutrient enemata, injections of artificial serum, and the administration of sedatives.

The authors explain that the operation was practised at the level of the base of the second frontal convolution, in order to avoid injury to the pyscho-motor centers, and yet admit of the serum being deposited near enough to them to find its way to the affected parts by diffusion. They do not seek to attach undue weight to this single case, but they properly insist on the severity of the disease and on the positive character of the evidence afforded in this instance. It seems to us that Roux and Borrel have now made a substantial advance in the serum treatment of tetanus.—*New York Medical Journal*, July 9, 1898.

THE TREATMENT OF CHRONIC NASO-PHARYNGITIS.

The July issue of the *Memphis Lancet* has an article in it by SOMERS, of Philadelphia, on this subject. He believes it best to discuss our local remedies under the divisions of pigments, ointments, powders, sprays, and vapors. The value of pigments depends upon their accurate application to the area hypertrophied or the seat of the ulcer, should such be present. Under the head of pigments, turpentine with oil of anise makes a valuable application, especially in acute exacerbations of the chronic affection; it may be diluted with lavender, and any of the essential oils may be used to disguise the odor, anise, as mentioned, being very agreeable to the majority of patients. This should be applied to the nasopharynx with the cotton tuft on a curved applicator several times weekly. In many cases it seems almost impossible to apply the drug on account of the irritable condition of the parts, the uvula immediately being drawn upward and backward as soon as the tongue depressor is placed in the mouth. In these cases a one-per-cent. cocaine spray will greatly facilitate the treatment, or in its place good results are obtained with a spray of five grains of menthol to the ounce of liquid cosmoline or any of the bland oils used for this purpose. A palate retractor is frequently of value, and although somewhat unhandy at first, one soon becomes able to manage it without any difficulty. White's self-retaining is the one the author uses, and he has found it very satisfactory, enabling one to apply the pigment to the proper area desired. It seems to be the custom to apply the remedy to the pharyngeal walls and vault without any evidence of the medicament reaching the part diseased; should the condition be due to ulceration of the posterior end of the middle turbinal, it is impossible in the general way of making local applications to reach the affected parts at all, and it is best to use the rhinoscopic mirror in every case where applications are made to the nasopharyngeal region.

As a stimulating absorbent the following has been found useful in many cases:

℞ Iodine crystals, 10 grains;
Potassium iodide, 20 grains;
Menthol, 50 grains;
Glycerin, q. s. ad 1 ounce.
M. Sig.: For local application.

Or the muco-purulent secretion may be materially diminished by:

℞ Camphor,
Carbolic acid, of each 30 grains;
Menthol, 50 grains;
Turpentine, ½ ounce;
Albolene, q. s.
Sig.: The albolene, or any suitable oil, is added a drop at a time until one drop remains free in the bottom of the bottle.

Nitrate of silver in obstinate cases is valuable if applied to limited areas, and it may be used in solutions varying in strength from ten grains to saturation. As is well known, the application of weak solutions of silver to the mucous membranes is somewhat painful,

while strong solutions if carefully used cause no inconvenience; but caution should always be observed to see that there is no excess of fluid on the applicator and that it does not touch any part but that for which it was intended.

Ointments have not been used to any great extent in the nasopharynx, but they are very serviceable, as they remain for a considerable time after being applied and allow the drugs to exert a continuous action. They are applied in the same manner as pigments and various combinations may be used, the following being of service in the affection described:

℞ Ichthyol, 1 part;
Zinc oxide, 10 parts;
Wheat starch, 10 parts;
Lanolin, 20 parts.

Many other combinations will readily be suggested by using pigments in this manner, and often better results are obtained with the ointments than with the latter form of medication. Powders are rarely of value, as they are apt to get into the larynx and produce violent attacks of coughing, even if the utmost care be used in their application, and at the same time a great objection is that it is impossible to apply them solely to the parts desired, as they cover the entire region and more or less obstruct the already diminished respiratory area. Of far more value and utility are the sprays, always being used before other local applications to remove mucus, etc., and they are serviceable to the patient as being readily used at home. With a coarse or fine spray we may apply any drug in solution that seems best suited to the individual case; the alkaline antiseptic spray or wash, depending on the method with which it is used, and known as "Seiler's," being representative in its class. Sprays may be used to cleanse the parts, as the one just mentioned, or as antiseptics, astringents, and sedatives, hamamelis representing the last class.

Vapors or nebulæ are generally used as inhalations for the various forms of laryngeal inflammation, but occupy a distinct and valuable place in the therapy of the affection described in this paper. Their value lies in the penetrating power they possess, the medicated vapor penetrating the recesses of the nasopharyngeal region and, when an oily base is used, remaining in contact with the tissues for some time after being inhaled. Nebulæ may be used either with or without the addition of steam, the choice depending upon the result desired, and when the mucus is tenacious and clings to the vault of the pharynx, especially at the orifice of the Eustachian tube and adjoining fossæ, we find an alkaline steam vapor will readily cause the separation of the adherent secretions from the mucous membranes, and for this purpose the following will be found useful:

℞ Sodii bicarb.,
Sodii biborate, āā gr. x;
Potass. bromide, gr. v;
Aqua mentha pip., ʒ ij;
Aqua dest., q. s. ad ʒ j.
Sig.: Use twice daily.

Inhalations may be used at any time during the day, provided steam is not mixed with them; should hot vapors be desired, the patient must not go into the air for at least one hour afterward, as the mucous membrane becomes relaxed and coryza almost invariably results. It is the best plan to use inhalations at the room temperature during the day and then direct the patient to steam the nasopharynx for five minutes just before retiring for the night; in this way all danger of coryza or of acute exacerbation of the catarrh will be avoided, and after this has been repeated a few times there will be no difficulty in removing the tenacious mucus. The following formula may be used at night as a stimulant; it acts by increasing glandular secretion and stimulating the parts to normal activity:

℞ Ammon. chlor., gr. xv;
Tr. benzoin comp., ʒ j.
Sig.: One-half teaspoonful in four ounces of boiling water.

There are a number of satisfactory devices to use vapors that are very useful in office work, while the patient may obtain a vaporizer especially made for this purpose, or the solution desired may be placed in a cup filled with boiling water; over this an ordinary funnel is inverted, and the medicated steam may readily be inhaled. It is essential to see that the patient allows the vapor to pass through the nasopharynx and out through the nose. Although this is usually more difficult to learn than the usual forms of laryngeal inhalations, still no trouble should be experienced on this point.

THE PECULIAR SUSCEPTIBILITY OF WOMEN TO THE TOXIC ACTION OF SULPHONAL.

POLLITZ (*Vierteljahrsschrift für Gerichtliche Medicin*, xv, 2; *Wiener Klinische Wochenschrift*, June 9, 1898) relates the case of a

woman who was treated very successfully for a puerperal mental affection with sulphonal, given to the amount of twenty-two and afterward fifteen grains daily for more than a year, with frequent interruptions of the treatment for weeks at a time. Finally symptoms of sulphonal poisoning appeared —deep-red coloration of the urine and diminution in the amount of that secretion, obstinate constipation, and loss of appetite. The case ended fatally, but it is remarkable that periods of notable improvement in the woman's condition preceded her death. At the post-mortem examination there was found extensive disease of the secernent epithelia of the urinary tubules.

Pollitz calls attention to the fact that the recorded cases of sulphonal poisoning have been in women for the most part. Among twenty-one cases, Schulz found that twenty were in women, and all observers have found that the victims of sulphonal poisoning were anemic to a certain degree. The inference seems reasonable, Pollitz thinks, that certain conditions of the blood, such as chlorosis, have a direct connection with the supervention of toxic phenomena under the use of sulphonal.—*New York Medical Journal*, July 9, 1898.

CORNEAL ULCERS, VARIETIES AND TREATMENT, WITH SPECIAL REFERENCE TO SUBCONJUNCTIVAL INJECTIONS.

Willetts, writing upon this subject, says that in the treatment of corneal ulcers atropine is looked upon as almost a specific, when in reality it is only a preliminary step. It has no germicidal action, and has no bearing on the cure of the disease, excepting that of preparing the parts for reparative action. It paralyzes the accommodation, doing for the eye what a splint does for a fracture—puts the part in absolute rest, which is a recognized factor in the successful treatment of all disease. It relieves the local congestion, which, however, is a symptom only, and seems to have a special action on some varieties that is not applied to others. In phlyctenular keratitis, which is not dependent on micro-organisms, while atropine is not contraindicated it certainly is not indicated, and the patient may be spared the annoyance dependent on its use. This disease, principally one of childhood, is characterized by elevations of the corneal epithelium at the limbus, dependent on the congregation of leucocytes at the peripheral nerve endings. It is readily cured by the yellow oxide of mercury of suitable strength, together with supportive treatment, in those cases of scrofulous diathesis, or cachexia, from unhygienic surroundings. Analogous to this form is keratitis fascicularis, which, like the former, commences at the margin of the cornea; but this, unlike the former, invades the cornea, generally in a parallel line, dragging after it a leash of blood-vessels, the arrangement of which is pathognomonic of this affection. It yields readily to the same treatment.

The serpiginous ulcers with hypopyon and other forms of corneal infection, such as onyx, require a more radical and prolonged treatment, the benefits of the actual cautery in these infections being infinitely superior to any other method. The author has never seen a single bad effect from its use, and has used it when the condition of the conjunctival sac would seem to contraindicate it. It is decidedly preferable to the Saemisch operation, which only relieves the tension at the expense of a new traumatism; the evacuation of the hypopyon being not essential, since its absorption is assured under proper treatment. The cautery at a red heat should be applied to the underlying edges of the ulcer, and in case of onyx penetrate it deeply, experience having taught him that the floor of the ulcer will undergo resolution with a thorough cleansing, or slight curettement. The cautery is a direct, immediate stimulant, and destroys the microbic area with which it comes in contact, instead of creating a new condition favorable for infection, as the Saemisch operation does.

All of these cases need atropine, hot water, and the systematic influence of mercury. The latter may be accomplished by any method consistent with scientific medicine. Lagrange and Formaget have employed mercuric cyanide by conjunctival injection in the treatment of panophthalmitis, Chavellereau in the treatment of vitreous opacities, and Dunn in hypopyon keratitis. E. H. Bernst prefers mercuric cyanide to bichloride, claiming for it a quicker and more complete absorption. He is in favor of the method. De Schweinitz, Baker and Ray concur in his opinion, while Stirling, Reynolds and Savage have had unfavorable experience with this method. Fernandez reports encouraging results in the treatment of trachoma by the subconjunctival injection of the permanganate of potassium. An injection of one-per-cent. solution of cocaine is first given, fol-

lowed in about twenty minutes by an injection of from one-half to one gramme of a 1:1000 strength solution of permanganate of potassium. The eyes are washed daily with an antiseptic solution, and in about eight days (or after the swelling has subsided) the injection is repeated. Mellinger and Bossaline introduced India ink beneath the conjunctiva of rabbits, and demonstrated beyond cavil that fluids so introduced follow the greater lymph channels and surround the entire globe; the amount of ink actually entering the eyeball being small in comparison to the amount injected. They believe that the fluids also connect with the suprachoroidal and intervaginal spaces of the optic nerve.

Abadie repeats his injunctions against bichloride solutions, especially when iodoform is used contemporaneously in purulent ophthalmia, on account of the evil effects on the cornea. Galezowski has abandoned the method, and Ray feels that he cannot depend on it exclusively.

The progress of medicine is not so much dependent on new discoveries as it is on the careful sifting of the evidence at hand and the elimination of its errors. Its gain has been one of principle at the expense of superstition, and to-day it is an exact science. The theory of subconjunctival injections must be an error, since it is incompatible with the first teachings of not only hypodermic medication, but all medicine. Mellinger and Bossalino's illustrated experiments, showing a section of an enucleated eye, in which India ink had been injected during life, and which shows the ink in the eye and surroundings, is interesting only because it shows the channels traversed, for it has no bearing on the efficacy of the method. That it was found in the eye and optic sheath should not occasion so much surprise as its absence in these parts would, since we know that were it not an inert, insoluble product, it would be found in every organ of the body.

Hypodermic medication is too well established, too frequently used, and the effect too palpable to doubt its immediate penetration of every organ of the body. It was for this that it was adapted and adopted. Its earliest promoter, Ruppaner, makes no claim in his treatise for especial benefit of the tissues at the site of injection. On the contrary, he speaks of the possibility of abscess in that region. We know that there is a disturbance of the relation of the cellular tissues at this point; that the solution injected is an irritant; that the traumatism causes an increased leucocytosis—which are all favorable to the production of abscess even in a healthy tissue. Photophobia, lacrimation, congestion and pain are the predominant symptoms in corneal ulcer. The congestion is in direct ratio to the virulency of the infection. If this be great, the congestion in all the orbital tissue is great. There is no clinical data, no evidence, no law in medicine, that teaches us to select an already congested area for the introduction of an irritant, thereby accentuating the conditions instead of benefiting them. Conclusions are:

That the *rationale* of the treatment of corneal ulcers by subconjunctival injections is extremely questionable.

That the results are no better than if the injection be given in another part of the body.

That the eye not injected receives as much medication as the injected one.

That it accentuates already abnormal existing conditions.

That it adds a new traumatism to an old inflammation.

That it has a tendency to promote suppuration, to say nothing of thrombi.

EXPERIMENTAL RESEARCHES ON THE EFFECTS OF DIFFERENT ANESTHETICS.

This important subject has again been taken up by THOMAS and KEMP in the *Medical Record* of September 3, 1898. They tell us that as regards ether, it would appear that this agent produces a special contraction of the renal arterioles, with a constant damaging effect upon the renal secretory cells, similar to those which follow clamping the renal artery. The kidney shrinks in bulk, with consequent fall of the oncometric tracing, and accompanied by a diminution of secretion, marked albuminuria, and finally suppression. As remarked before, this condition of the kidney is not due to any change in the general arterial circulation.

These facts would seem to contraindicate the use of ether as an anesthetic when renal disease is present, and particularly when with albuminuria there is a tendency to pulmonary edema.

The effect of chloroform upon the kidney seems to be *nil*. The oncometric curves are nearly normal and are affected only through sharing in general circulatory changes. The secretion of urine continues up to the last

moment of life, and the albuminuria is so slight that its presence at all is apparently due only to respiratory interference. Meantime the action of chloroform on the heart, as shown by the carotid tracings, is directly depressing. Ether, on the other hand, shows evidence of cardiac stimulation throughout.

The A. C. E. mixture shows the special effects both of ether on the kidneys and of chloroform on the heart, either being predominant according to the mode of the administration. If a large percentage of air be simultaneously inhaled, as is the case when chloroform alone is administered, the effect is that of chloroform cardiac depression without the effect of ether upon the kidney. If, however, the A. C. E. mixture be administered more as ether is when used alone, then a study of the carotid and kidney tracings shows clearly that we have both the cardiac depression of chloroform and the renal derangement of ether combined. This seemed to cause such powerful effects upon the breathing and upon the heart that artificial respiration had to be resorted to in every dog to which this mixture was freely administered, which was not the case with either ether or chloroform. As far as the author's observations go, therefore, they fail to see any advantage in this mixture of chloroform and ether, but rather the reverse.

These objections appear to be still more applicable to Schleich's anesthetic. The cardiac depression of chloroform and the renal disturbance of ether are simultaneously developed in the tracings, similar to but to a greater degree than with the A. C. E. mixture. Schleich claims that mixtures of different anesthetics of different boiling—*i.e.*, maximum evaporation—points are safer than the administration of the anesthetic alone, on the assumption that the absorption of an anesthetic as to quantity depends upon its boiling point. The more volatile an anesthetic is, the less will be absorbed into the blood in a given time. Hence ether, the boiling point of which is 93° F., will not be absorbed so rapidly as chloroform, whose boiling point is 143° F. If, therefore, an anesthetic could be produced whose boiling point was the same as the normal temperature of the blood, the exact amount absorbed with each inspiration would be eliminated by each expiration. By causing the mixture to be at different degrees above this point, he claims that we can regulate at will the excess which the expiration would not remove, and thus the amount of the anesthetic retained in the blood. His addition of petroleum ether or benzine to sulphuric ether and chloroform was further to facilitate the formation of a mixture or solution of anesthetics which would afford a safer means of absorption.

The authors believe that practically this reasoning is fallacious, because it assumes that these mixtures or solutions constitute a new chemical homogeneous compound which will always be inhaled as one substance in definite chemical proportions, just as a compound salt is one substance when swallowed after solution in water; whereas the fact is that ether remains ether and chloroform stays chloroform during the inhalation, and the proportion of either which will be absorbed will depend upon the mode of administration, a tight cone allowing an amount of chloroform to be taken which would be extremely dangerous, while the free admixture with air would so lessen the absorption of ether that its specific effects would be proportionately lessened. Meantime the adoption of benzine is not the adoption of an anesthetic, for Dr. S. T. Meltzer, in a communication to the writers on his experiments upon rabbits with petroleum ether, by inhalation through mouth and nose, as well as through a tracheal cannula, says: "Petrol ether is not a narcotic. If a rabbit was put under deep anesthesia by ether, and then ether suspended and petrol ether administered, the lid reflex soon reappeared and the rabbit woke up. The inhalation of pure petrol ether alone soon brings out a distinct tetanus and opisthotonos, to which the animal soon succumbs if the inhalation be continued. If the inhalation be discontinued at the appearance of the convulsions, the animal survives the tetanus, but this is then followed by a distinct paresis of all the extremities. If ether is given with the petrol ether, the tetanus movements are suspended, but not so paralytic after-effects; the rabbit dies of paralysis of the respiratory muscles."

There is, moreover, a physical reason for doubting the manageability of mixed anesthetics, due to the fact that if two agents of different maximum points of evaporation be mixed together, the more volatile of them will increase the evaporation of the other, by carrying off more of the less volatile one than if the latter were vaporized by itself. Thus more chloroform would be inhaled if mixed with ether than if it were administered separately.

That Schleich's mixtures have been used

in a number of cases without dangerous effects is no evidence that they are safe, for the same may be said of chloroform and of ether the world over. Mixed anesthetics of any kind might be employed in hundreds of instances without unpleasant results, though actually they were more dangerous than unmixed agents, for with chloroform itself surgeons have published reports of ten thousand administrations of it without one serious accident.

THE TREATMENT OF INOPERABLE SARCOMA WITH THE MIXED TOXINS OF ERYSIPELAS AND BACILLUS PRODIGIOSUS: ITS IMMEDIATE AND FINAL RESULTS IN ONE HUNDRED AND FORTY CASES.

COLEY makes a further contribution to his study of this subject in the *Medical Record* of August 27, 1898. He has used the toxins in a number of cases after a primary operation, with the idea of lessening the chances of recurrence. Theoretically this use of the toxins has much to recommend it, but as yet the cases are too few in number to justify positive statements. A few weeks' treatment with moderate doses is free from risk, and is worthy of trial.

The preparation at present used differs in no way from that described in Coley's previous paper. It consists of the mixed, unfiltered toxins of the streptococcus of erysipelas and bacillus prodigiosus, grown together for two weeks and sterilized by heating to 58° C. In children and patients much reduced in strength it is better to use the filtered toxins. This preparation is much weaker than the unfiltered, the relative strength being about one to ten. However much difference of opinion there may be as to the part the bacillus prodigiosus plays in causing the disappearance of sarcoma, the fact remains that all of Coley's successes, as well as those of other surgeons, have been obtained with the combined toxins, and he is quite convinced that the process of degeneration of the tumor tissue is greatly increased by the addition of the prodigiosus.

Many opinions have been expressed as to the nature of the process by means of which a cure is effected in the successful cases. The opinion which has been most generally advanced—though resting on theoretical rather than practical knowledge—is that it is a simple necrosis or sloughing process, resembling that following the injection of any powerful escharotic, like carbolic acid. Consequently, it has been regarded as an entirely local process. This is far from the truth. While in some cases of soft round-celled sarcoma the rapid breaking down of the tumor would lend support to this view, there are many cases that absolutely disprove its correctness. A number of cases of sarcoma have disappeared entirely by absorption, with no breaking down; and furthermore, in several cases the injections were made remote from the tumor. This proves the action to be systemic as well as local. The toxins in some way, acting probably through the blood-serum, cause a necrobiosis with fatty degeneration of the tumor cells, the breaking down and formation of the slough depending entirely upon the preponderance of the cellular elements over the intercellular or fibrous stroma. In the spindle-celled variety absorption without breaking down is the more common process, while in the round-celled type the reverse is true. Usually, when possible, it is better to give the injections locally; a much larger quantity can, however, be safely given subcutaneously than when injected into the tumor, and this is a point of much practical importance. A severe chill and rise of temperature to 105.5° F. have been known to follow the injection of one-half minim of the mixed, unfiltered toxins when made into a highly vascular sarcoma. The severity of the reaction depends largely upon the rapidity of absorption.

The rule should be to begin with a minimum dose — for example, one-half minim — and slowly increase daily until the desired reaction has been reached. If this rule be carefully observed, the element of danger is exceedingly small. Inasmuch as the dose depends largely upon the virulence of the cultures from which the toxins are prepared, and since it is extremely difficult to keep cultures of the same degree of virulence, the dose must vary within certain limits and can be determined in the individual case only by trial, the temperature furnishing the guide. The initial dose should never be larger than one-fourth to one-half minim; boiled water may be added for the proper dilution. The aim should be to give sufficient to produce a temperature of 101° to 103° F. In some of the successful cases not more than three or four chills were produced during the entire course of treatment, and frequently patients have steadily gained weight while under treatment. This controverts the statement of some writers that the treatment is exceedingly depressing and causes rapid emaciation.

This may be true if the doses are too large, but not when the treatment is judiciously carried out. Strychnine may cause speedy death or act as an excellent tonic, according to the amount administered.

The strictest precautions should always be taken to guard against infection, for the reason that a patient is unusually liable to infection from other germs while taking the toxins. The skin should be rendered aseptic and the needle be sterilized by being passed through an alcohol flame before and after using.

It is possible in most cases to tell within a comparatively short time whether or not the toxins are likely to be efficacious. If no improvement is noted at the end of three weeks, there will be little use in continuing the treatment. In many cases marked improvement is seen within a week after the first injection. If improvement occurs the treatment should be kept up until the tumor has disappeared or until it is evidently again increasing in size.

The question of the cumulative action of the toxins if the treatment be long continued is an important one. The toxins are rapidly eliminated, and that no harm is likely to result from prolonged treatment is evidenced by the following cases:

In one case the toxins were administered steadily two or three times a week for a period of two and one-quarter years; the patient gained ten pounds in weight and remained in perfect health the entire time. In a second case the treatment has been continued, with few intervals of rest, for a period of nearly four years, with no ill effects. The writer has personally had two deaths from the treatment, and he has known of six others in the hands of other surgeons.

Out of a total of 140 cases, eighty-four were round-celled; twenty-one spindle-celled; six mixed; nine melanotic; two chondro-sarcoma; six sarcoma, in which the clinical diagnosis was not confirmed by microscopical examination; twelve sarcoma, in which the type of cell was not stated, though the diagnosis of sarcoma was confirmed by microscopical examination. Of the eighty-four round-celled sarcomata, thirty-five were more or less improved; three disappeared entirely, one patient remaining well upwards of three years, one at present well one and one-half years, and the third well at the end of one year, since which time he was not traced. Of the twenty-one spindle-celled, ten disappeared and all the others showed marked improvement. Of the six mixed-celled, three improved; two were unimproved; one disappeared, and the patient remained well for three and one-quarter years, at the end of which time there was a recurrence in the abdomen, which proved fatal after six months' time. Of the nine cases of melanotic sarcoma only two showed slight improvement, the remainder being unaffected by the treatment. One large chondro-sarcoma disappeared, recurred at the end of seven months, and finally proved fatal; the other was slightly improved. Of the twelve cases in which the type of cell was not known, six were improved, five unimproved, and one tumor disappeared. Of the six cases not confirmed by microscopical examination, two osteosarcomata disappeared, two improved, and two remained unimproved.

Well over three years, eight cases; well from one to three years, nine cases; well from six months to one year, four cases; recurred after having once disappeared, four cases—two of these patients died, two are still living in good health after further treatment.

From published reports and personal communications, the writer has been able to collect thirty-five cases of inoperable sarcoma in which the tumor completely or very nearly disappeared as a result of the treatment in the hands of other surgeons. In twenty-six of these cases the tumor entirely disappeared. Of the total number, ten were spindle-celled; eleven were round-celled (one giant-celled); one myxosarcoma; and one endothelial sarcoma. In ten cases no microscopical examination was made, though careful examination by a number of surgeons rendered the clinical diagnosis scarcely open to question. In the remaining cases the diagnosis of sarcoma was confirmed by microscopic examination, but type of cell not stated. In addition, in five of the nine cases there was a history of recurrence after operation. Of the thirty-four cases, nine are now well upward of three years; nine from one to three years; in six cases the disease recurred in other regions of the body at the disappearance of the primary growth. This latter fact alone—that the disease recurred elsewhere—is sufficient to establish the correctness of the original diagnosis of sarcoma.

A careful study of the writer's cases, as well as those thus far treated by other surgeons, justifies the following conclusions, which are in almost perfect accord with those recently published by Moullin:

1. A considerable number of inoperable

sarcomata, the correctness of the diagnosis of which is beyond question, have entirely disappeared under this method of treatment.

2. A large proportion of these cases have remained free from recurrence more than three years after treatment—the period which has generally been accepted as of sufficient length to justify their being regarded as permanent cures.

3. Different varieties of sarcoma differ widely as regards the manner in which they are acted upon by the toxins. The results thus far show the treatment to be most successful in the spindle-celled variety, one-half of the spindle-celled sarcomata so far treated having disappeared. Round-celled sarcomata yield less rapidly, although a certain number have been successfully treated. No case of melanotic sarcoma has, up to the present time, shown more than slight improvement.

4. The action of the toxins upon sarcoma must be regarded as a rapidly progressing necrobiosis with fatty degeneration. This action is not the result of inflammation, nor does it resemble the destructive action of a local escharotic, but it is rather specific in character, exerting a direct influence upon the tumor cells.

5. The specific action is further confirmed by the fact that several tumors have entirely disappeared when the injections were made subcutaneously remote from the tumor.

6. This method of treatment is attended with a certain amount of risk, unless certain precautions are taken. The chief dangers to be guarded against are: (1) collapse from too large a dose of the toxins or from injections into a very vascular tumor; (2) pyemia from insufficient precautions as regards asepsis, especially in cases in which there is a granulating or sloughing surface. (That the risks are small is shown by the fact that in upward of two hundred cases treated personally death was caused by the injections in but two, one of which was so nearly moribund that no treatment should have been begun.)

7. The use of small doses of the toxins for a short period after primary operation, as a prophylactic measure, theoretically has much to recommend it, and if proper precautions be observed the treatment should be practically free from risk.

The action of the toxins of erysipelas upon sarcoma, as shown by clinical results, is in strict accord with the known action of the living streptococcus of erysipelas; therefore the method has a perfectly logical and scientific basis.

ASEPSIS IN OPERATIONS.

QUENU (*Revue de Chirurgie*, March, 1898), in speaking of Mikulicz's use of gloves in operations, says that he has not seen in his practise the amount of suppuration in hernias that Mikulicz has. The ideal is that a surgeon who practises the major operations should not touch abscesses, or, at least, that he should never put his finger in pus; and in Quenu's clinique an assistant takes charge of all phlegmons and suppurations, and after a vaginal or rectal examination the infected finger is brushed and washed with alcohol and dipped in permanganate of potash, the bisulphite of soda, and then in alcohol. If there is any doubt about the sterility of the fingers after the usual washing, they are washed in a concentrated solution of permanganate of potash, then in bisulphite of soda, then in alcohol, followed by a solution of 1 in 1000 of perchloride, and tincture of iodine is then painted on the skin under the nails.—*Quarterly Medical Journal*, July, 1898.

HYSTERIA AND BRAIN TUMORS.

KRAUSS (*Buffalo Medical Journal*, August, 1898) in considering the differential diagnosis of these affections, of cardinal importance to the surgeon, calls attention to the fact that all cases of suspected brain tumor with hysterical manifestations must not be considered as having been absolutely organic because death has occurred, since it is a well known fact that a fatal termination may sometimes result from the different effects of hysteria, and it is quite a mistake to look upon the disease as always having a favorable prognosis, so far as life is concerned.

Fournier and Sollier have observed cases of spasm of the glottis in hysterical girls so severe that death ensued; also in hysterical angina pectoris, which is generally curable, yet Potain reported a case in which death took place and in which on post-mortem examination absolutely nothing was found.

Fournier and Sollier also refer to hysterical anorexia in which there is sometimes a fatal termination, and even should recourse be had to artificial feeding there seems to be no power of absorption. The wasting continues and the patient dies. They also refer to the danger of forcible feeding in such cases. One of their patients who presented a marked degree of anorexia expressed a wish for some cheese, and died the same evening that she ate it. The authors point out that sudden death

may occur after hysterical vomiting, and they give the notes of one such case, no lesion of any kind being found on post-mortem examination. Thus it will be seen that the utmost care is necessary in making the examination, and still greater care and caution in interpreting the meaning of the different symptoms. In a previous paper Krauss has called attention to three groups of symptoms occurring in tumors of the brain, viz., the early symptoms, the classical symptoms, and the decisive symptoms.

The early symptoms are similar to those met with in neurasthenia and hysteria, as headaches, incapacity for mental work, disordered digestion, nervous irritability, and a general malaise. The classical symptoms enumerated in the order of their importance are: (1) head pain; (2) optic neuritis; (3) mental apathy; (4) nausea and vomiting; and as a special localizing symptom to be added to this group must be included (5) paralysis. The decisive symptom, choked disc, is the only symptom which has never been observed in the varied symptomatology of hysteria, whereas all the early and classical symptoms have been frequently noted in functional diseases. It is therefore of extreme importance that this sign should be sought for, not only at the first examination, but at every subsequent examination until its presence is determined, or its absence along with continued improvement signifies a purely functional disturbance in the patient.

"RECURRENT" GONORRHEA.

VALENTINE (*Atlanta Medical and Surgical Journal*, September, 1898) presents the following *résumé:* In many a case apparently cured of gonorrhea a discharge suddenly appears weeks, occasionally months, after the last evidence of disease was observed. This happens sometimes after coitus, sometimes without; after a glass of beer, after transient erotic excitement, or without any apparent provocative cause. Unless one knows the patient well, such a case may tax the practitioner's faith, if he would not deem the recurrence a new infection.

Oftentimes, indeed, microscopic examination shows such a suddenly appearing discharge to be loaded with gonococci, grouped in the manner characteristic of recent infection. These microbes are sometimes also disseminated throughout the discharge, or they appear scattered only.

The principal causes of such a "recurrent" gonorrhea are: Marital reinfection; infarction of crypts, glands, or follicles of the anterior urethra; chronic residual posterior gonorrheal urethritis; gonorrheal prostatitis; seminal vesiculitis. Any two or all of these causes may be united in one case.

Whatever the cause, irrigations may soon bring about their apparent cure. And the disappearance of all symptoms of disease may be so rapid as to cause the patient and the physician to deceive themselves into believing that a permanent cure has been effected. The young practitioner especially should be warned against taking even a succession of such cases into statistic consideration, unless in each case he has assured himself that the patient is free from the causes of recurrence. To briefly discuss them:

Under marital reinfection, the evidences of gonorrhea in a woman may be so slight as to be imperceptible. The hopelessness of obtaining a cure in a man who is continually exposed to marital reinfection is too evident for discussion.

Experience daily shows patients so far returned to apparent health that the urine is perfectly free even from granules. Months, years, may go by without any results from provocative cause. Then suddenly the urine, from constitutional causes, becoming irritant to the urethra, reawakens its susceptibility to the gonococci that remained quiescent within its crypts, glands, and follicles, and an apparently new gonorrhea springs up.

Chronic residual posterior gonorrhea is the cause of autoinfection most obscure, the most difficult to diagnose, but not very difficult to treat. Its precise differentiation requires, however, something beyond ordinary experience in urethroscopy, and therefore is more proper for discussion in a paper written for specialists in genito-urinary diseases.

Roughly, though, it may be said that when the first morning urine is free from even granules, expression of the posterior urethra may detach sufficient flakes to be carried in the first urine. This, centrifugalized and examined microscopically, may reveal gonococci, of which no suspicion could be otherwise obtained.

The technique of expression of the posterior urethra is simple enough for even a tyro to perform. It in nowise differs from massage of the prostate and stripping the seminal vesicles, except that to obtain certainty regarding the location of the affection pressure upon the prostate and vesicles must be avoided.

In a brilliant paper on the subject of gonorrheal prostatitis Wossidlo, of Berlin, urges that no case of gonorrhea should be dismissed without assurance being obtained that the prostate is free from disease. Perhaps the majority of cases of "recurrent" gonorrhea are due to prostatic invasion.

Seminal vesiculitis, if gonorrheal, as it is in the majority of cases, may be the cause of recurrent clap. Its other symptoms, even more so than those of prostatitis, supply that vast array of manifestations so often diagnosed as neurasthenia.

If, in a case of recurrent gonorrhea, marital reinfection can be excluded by (*a*) examination of the woman; (*b*) infarction of the crypts, glands and follicles by urethroscopy; (*c*) chronic residual posterior gonorrheal urethritis by expression of the posterior urethra and posterior urethroscopy; (*d*) gonorrheal prostatitis by massage of the prostate, —then we must look for gonorrheal vesiculitis.

The local manifestations of the last three conditions are grossly the same, differing only in detail.

For such an examination the author deems it best to place the patient on a sofa, lying on his back. The apex of the index-finger and the bed of the nail being tightly packed with soap and then thickly anointed with vaselin, the finger is gently inserted into the rectum. The other hand rests above the pubis to steady and press down the pelvic viscera. The pulp of the finger is turned toward the front of the patient, and lightly outlines the prostate, but exercises not even the slightest pressure on any part of it. If the operator desires to elicit evidence of chronic residual posterior gonorrhea, he lets the finger glide from the prostate and exercises pressure, with increasing force, in a stroking motion forward from the lowermost margin of the prostate, endeavoring with each stroke to force the posterior urethra against the posterior aspect of the pubis.

The patient is then ordered to urinate, and if this is the region affected, the urine will contain flakes, perhaps even filaments or shreds, which the urinary stream was unable to detach. Microscopy of these products of massage will reveal the character, probably gonorrheal, of the posterior urethritis. If this results negatively, examination for prostatitis may be made in the same manner, several days later. The size, shape and hardness or softness of each lobe, as well as of the isthmus, should be ascertained; lobulation or smoothness should be elicited, depressible points located, and the prostatic juice, if any exudes from the meatus, microscopically examined. If none escapes, the first urine the patient passes after this massage of the prostate should be centrifugalized for examination. If the prostate contains gonococci, they will be found either in the discharge that escapes from the meatus or flows into the posterior urethra or bladder and is carried off by the urine.

If the prostate is found to be normal, then the patient should be examined two or three days later for seminal vesiculitis. This is done in the same manner, except that the finger is passed up the rectum further, beyond the prostate and to its sides. In health the seminal vesicles can be barely, if at all, felt. When enlarged by disease they assume the shape of more or less tensely filled little sausages. In engaging the finger as high up as possible on these bodies, by curving the finger downward and toward the center with increasing force, the seminal vesicles may be stripped of their contents. These are treated in the manner as described under the examination for prostatitis.

The first of either of these examinations is usually attended with some pain, but the relief the patient experiences is usually so great that he will ask for its repetition.

As in all other genito-urinary work, gentleness in these manipulations cannot be too strictly followed. Nothing is gained by violence, even harm can be done. Physicians unable to devote the most exquisite gentleness and sympathy to these cases would do well to relegate them to others.

The treatment of recurrent gonorrhea should be directed to its cause, or perhaps better, its location.

Where marital reinfection is the cause, attempts to cure the husband must prove futile while the wife remains ill, as in the majority of instances prohibitions regarding coitus are of no avail.

Where the crypts, glands or follicles of the anterior urethra harbor gonococci, if systematic dilatations and irrigations do not entirely suffice, electrolysis will complete the cure.

When posterior urethritis, prostatitis or seminal vesiculitis causes the exacerbations of autoinfection, Kollman's posterior dilator, massage of the prostate and stripping of the vesicles will be required. Irrigations, as elsewhere described, will be found valuable adjuvants to the treatment. While it is not at

all likely that even the most copious irrigations will wash away enough of the *materies morbida* to materially affect the disease, they procure an artificial edema which renders the mucous membrane an unfavorable culture medium for the gonococci.

In all cases the general condition, as well as the nervous system, suffers deterioration. This must be met by constitutional treatment, tonics, baths, attention to digestion, indeed every means at our command to fortify the patient's resistance against further inroads of the disease.

OBSERVATIONS ON GASTRO-ENTEROSTOMY AT THE BRESLAU CLINIC.

Although the operation of gastro-enterostomy has now been practised over fifteen years, and, according to the author's research ("Statistical and Experimental Studies on Gastro-Enterostomy," by Dr. V. Chlumsky (Breslau), *Beiträge zur Klinischen Chirurgie*, Bd. xx, H. 1 and 2), there are over 600 cases on record, its results are not entirely satisfactory. The chief drawback has been found to be the establishment of a "*circulus vitiosus*," and most of the modifications of the original Wölfler operation have been undertaken for its correction. The writer's studies have been specially directed toward this particular phase of the operation, and are based on the consideration of the seventy-four cases in Professor Mikulicz's clinic, the recorded cases in the medical literature, and supplemented by experiments on animals and on the cadaver.

Of the seventy-four cases occurring in the Breslau clinic (1884–97) there were twenty-four deaths — thirty-two per cent. The operation was performed sixty-one times for the relief of malignant disease. Cause of death: collapse, thirteen; kinking and spur-formation of intestine, six; peritonitis, inhalation pneumonia, inanition and myasthenia contributed to the fatal result in the remaining cases.

Perfect healing without any intercurrent disturbances occurred only twenty-seven times. The greatest prolongation of life in cancer cases was two and one-quarter years and two and one-sixth years (still alive). All ten of the cases of operation for non-malignant disease are alive—one ten and one-half years after operation.

The first four operations were according to Wölfler's method. From 1891 to 1896 von Hacker's method alone was used, except for three cases of carcinoma. In all there have been thirteen operations by Wölfler's method, with five deaths; von Hacker's operation, forty-three times, with fourteen deaths. The relatively frequent mishaps attending von Hacker's method, especially the kinking and spur-formation experienced in the recent cases, led to a renewed trial of the Wölfler operation and to the development of a special procedure, employed eleven times, with five deaths. Five recent cases of anterior anastomosis with the aid of the Murphy button all recovered.

Considering the disturbances that follow gastro-enterostomy and the means devised to remedy them, we find that the following facts are brought out:

Wölfler's original operation (1881)—simple incision of the stomach and intestine—was apt to be followed by persistent vomiting. This dangerous symptom was, however, frequently observed in all the modifications of the original method. The vomiting, aside from that due to the anesthetic and to the irritation of the peritoneum by chemicals, may occasionally be due to a rotation or constriction of the intestine at its point of attachment. In the majority of cases the vomited matter is not fecal, but purely bilious, and the patient dies of inanition. An autopsy will show a dilatation of the stomach and of the proximal portion of the anastomosed loop, while the collapsed condition of the distal loop shows plainly that no food has reached it, the entire stomach contents having gotten into the wrong limb of the loop, and becoming stagnant there are finally pressed back into the stomach, causing incessant vomiting. Besides the intestinal contents bile is also forced into the stomach. If, however, the opening is made in such a manner that the gastric contents pass equally well into both limbs of the loop, matters soon regulate themselves, the proximal portion becoming narrower and the distal end dilated; the resulting intestinal spur will press more and more against the afferent or proximal portion.

In most of the cases the contents of the stomach became stagnant, notwithstanding the existence of active contractions. This result may be due to a marked contraction of the opening from an unusual degree of union and shrinking of the borders of the fistula; or the longitudinal fibers of the stomach, having suffered but little damage by the incision, contract the opening by

muscular action. The spur between the two intestinal loops may act as a wedge and block the gastric opening.

In a large proportion of cases it will be found that the stomach and the proximal loop are enormously dilated, the distal collapsed. In this condition the peristalsis of the first portion of the bowel has been sufficient to force out the incoming material, and has become dilated to the point of absolute stasis. In the cases that recover—and a few do—even after these ominous manifestations, the patient's strength has been sufficiently maintained to allow the intestines to respond with further peristalsis, driving out the contents of the loop along into its proper channel. Another cause is to be found in the dissimilar size of the gastric and intestinal openings, although these were originally made of an equal length, but the intestinal wall gives less, and the stitches are, consequently, inserted farther apart, resulting in considerable puckering, which may block the opening.

The chief cause of vomiting is generally attributed to the entrance of bile and pancreatic secretions into the stomach. To prevent this occurrence Wölfler proposed fastening the two viscera together so that their axis of peristalsis should be directed the same way; this improvement, however, failed to accomplish its end. Further modifications were devised. Wölfler, Czerny, Mikulicz, and many others, endeavored to narrow the orifice of the proximal loop. If this attempt was only slight, the gastric contents were not prevented from passing in; if the opening was rendered very narrow, an accumulation of bile and pancreatic juice took place, causing vomiting and symptoms similar to those of incarceration.

In 1890 Lauenstein recommended making an anastomosis between the proximal loop and another coil. A better suggestion was that of Jaboulay and Braun, of establishing a communication between the proximal and distal loops. The merits of this procedure soon became obvious, but it had the disadvantage of prolonging the operation, and certain operators (among them Braun) only employed it as a secondary measure to relieve intractable vomiting. This measure saved four of Mikulicz's patients from an apparently certain death.

Kocher, Doyen, Chaput and others sought to give the opening the character of a valve. Kocher's method has as yet not been much practised. Doyen's, while extremely complicated, has given its deviser excellent results. In either method the main principle of the operation is contained in the position of the attacked intestine, Doyen putting the proximal above the distal, Kocher the distal in front of the proximal loop. Hahn and others thought to diminish the dangers of spur-formation and the flow of bile and pancreatic juice into the stomach by making only small openings; the result was bad, as these orifices became greatly reduced in size. The reverse condition—large openings ten to fifteen centimeters long, as recommended by Stansfield and Senn—was not productive of any special advantage. The operation is longer, the danger of infection is increased, a spur may form, and notwithstanding its size, the fistula may become obliterated.

Division of the gut, implantation of the distal end into the stomach and of the proximal into the distal segment below the site of anastomosis, was recommended by Wölfler and Chaput, but it is questionable whether even this procedure succeeds in keeping the bile from reaching the stomach.

Attempts have also been made to remedy some of the other unfavorable features of gastro-enterostomy. The loop of bowel selected for attachment varied greatly—from the lower end of the ileum to that portion of the jejunum immediately succeeding the duodenum. Rockwitz used Nothnagel's suggestion of determining the direction of the intestine by causing peristalsis with the application of salt to the bowel. The fallaciousness of this test was soon revealed.

In order to avoid the occurrence of a fatal peritonitis, so frequently observed in all methods of operation, numerous procedures not requiring the immediate opening of the stomach and intestines were tried—application of chemicals to the mucous membrane, ligation causing sloughing of tissues, etc. These methods have not been found to present any improvements over those already known.

In 1887 Senn, with his bone plates, was the first to employ a new method, which sought more quickly and surely to establish an anastomotic opening. Numerous other devices based on the foregoing principle quickly followed. Of these the Murphy button is the only one that has stood the test of time. It possesses the following advantages: The operation is materially shortened, the opening is ideal in its working, the danger of infection is much diminished, the passage of the stomach contents outward is more quickly and easily obtained, and spur-forma-

tion is prevented. Its disadvantages are its size—it either is so large that it fails to pass out of the stomach, or it is so small that the opening is insufficient; it may not be passed out and thereby produce unpleasant complications; its results as regards mortality are scarcely any better than with the suture method. The use of the button should be limited to cases of malignant disease.

The chief cause of death after gastro-enterostomy is "collapse." Improvement in this direction, according to Czerny, must be sought for by a more judicious selection of cases; according to the author, in perfection of technique.

With regard to the various modifications of the original method, von Hacker's is only an improvement of Courvoisier's operation. This "posterior" gastro-enterostomy has been much employed in recent years, and gives comparatively better results than the Wölfler operation. This advantage, however, may be only apparent, owing to the prevailing tendency to employ the simple anterior operation on the more desperate cases. Von Hacker's original contention that his method did away with the entrance of intestinal contents into the stomach has not been verified. The operation does not possess any essential advantages, and is attended with certain drawbacks less marked or wanting in the other methods.—*Annals of Surgery*, August, 1898.

Reviews.

On Cardiac Failure and its Treatment. With Especial Reference to the Use of Baths and Exercises. By Alexander Morison, M.D. Ed.
London: The Rebman Publishing Company, L't'd., 1897.

Although this book has but recently been received for review it appeared, as its title-page states, in 1897. As is indicated in its title it deals with the remedial measures other than drugs which are believed to be of value in cardiac disease. The volume opens with a review of our knowledge of the physiology of the heart in order that the reader may grasp the fundamental facts upon which the author bases his deductions. This portion is dealt with in a very useful manner in that the scientific side of the question is closely linked with the practical. All this text is included under the general heading of the Diagnosis and Symptomatology of Cardiac Failure. The second part of the volume discusses the Neuro-muscular and Hæmic Factors in Disease of the Heart and Their Bearing upon Prognosis and Treatment. Part III deals with the General Treatment of Cardiac Failure, and Part IV its Treatment by Baths and Exercises. This part is by far the most exhaustive portion of the work and covers more than one hundred pages.

It is difficult to review a monograph designed to elucidate the views of an author, for he is supposed by the very nature of things to put forward his own peculiar ideas. In this work Dr. Morison makes himself a special pleader for balneological methods, with special final reference to Nauheim in a chapter by Dr. Groedel.

There is no doubt that such methods do great good in a certain proportion of cases, and the men who know the bath methods are the first to recognize the fact that like all other therapeutic methods they will not do all cases good. This is an important fact for the general practitioner to recall before sending his patients to Bad Nauheim and elsewhere, and this book will give him clear ideas as to the rules which should govern his advice.

Transactions of the American Surgical Association. Edited by De Forest Willard, A.M., M.D., Ph.D.
Philadelphia: William J. Dornan, 1898.

This book, in addition to a list of the members of the Association and a record of the transactions, gives the papers presented by the members at the last regular meeting. The book contains an admirable picture of the late D. Hayes Agnew, and a careful report of the discussion on some extremely interesting papers.

A Text-book of Materia Medica, Therapeutics, and Pharmacology. By George Frank Butler, Ph.G., M.D. Second Edition.
Philadelphia: W. B. Saunders, 1898.

This book, the first edition of which we reviewed in the Therapeutic Gazette some time ago, now amounts to nearly 900 pages and deals with drugs according to a classification which is peculiar to its author and which has, we think, quite as many objections to be raised against it as some of the other classifications which its predecessors have attempted.

The early part of the work deals with a general consideration of pharmacology and therapeutics, with pharmaceutical preparations, then with what are known as "disease medicines," "symptom medicines," and

"topical remedies." As we have said before, there are necessarily many drugs which are used to relieve symptoms which are also used to relieve disease, and *vice versa*. Thus expectorants are classed among symptom remedies, while restoratives are classed among disease remedies.

On glancing over its pages we find that although nitrohydrochloric acid is mentioned as a pharmaceutical product, nothing is said about its therapeutics. Under the consideration of Animal Extracts we are told that "heart extract has been recommended in cases of nervous prostration, it being claimed that its action tends to raise the blood-pressure and increase the number of blood-corpuscles." This seems a rather indirect employment of a substance which, if it possesses any property at all, we should suppose would be employed in cardiac affections rather than in nervous prostration.

Under Mercury it is stated that should tonic doses be continued for too long a period there will be an increased weight owing to too great stimulation of the lymphatic system. This is not what is usually taught. On the contrary, it is generally stated that wasting follows the use of excessive amounts of mercurials. Under the article upon Antipyretics the following statement occurs which we fail to understand: "When the body is in a state of hyperpyrexia the heat center is in a depressed condition owing to certain poisons circulating in the blood, and will not respond to the normal limit of body temperature. Acetanilid increases the irritability of the heat center, causing it to respond to a lower temperature, and through its action on the vasomotor center stimulates the vasodilators, thereby augmenting the peripheral circulation, with consequent increase of heat dissipation." What this means from a physiological standpoint we do not know.

In the chapter upon Anesthetics, under the treatment of Untoward Manifestations it is recommended that one electrode be placed upon the larynx and the other one upon the epigastrium. Nothing is said as to the character of the electricity which should be used nor of the dangers of these applications, not to speak of their futility. Only thirteen lines are given to the consideration of nitrous oxide, and therefore it has been impossible for the author to give sufficient directions as to how it shall be employed. The prescription on page 418 is taken in every detail, even as to quantities, from another book on Therapeutics, save that in this instance the quantities are only given in apothecaries', whereas in the book quoted from both the metric and apothecary systems are given.

The description of the effects of digitalis upon the circulatory system is not clear from a physiological standpoint and somewhat contradictory. On page 544 the following statements occur: "It is asserted that the action of digitalis may be manifested for some time upon discontinuance of a brief dosage. With regard to the specific effect of the drug upon the heart muscle this is not true, since the influence of the drug lasts but a few days indirectly through the additional muscle power developed during a few weeks' administration." Exactly what this means we do not know. It is then stated that in cases of vascular tension digitalis should be combined with a vasodilator, of which opium or morphine is generally the most useful. We would suppose that nitroglycerin was *facile princeps* the remedy in such a case. Then, too, it is stated that digitalis is recommended by all authors in every valvular disease of the heart with the possible exception of aortic regurgitation, but nothing is said of the fact that digitalis is not needed in the presence of any valvular lesion unless there is failure of compensation. We doubt very much whether it can be proved that manna is a cholagogue, as stated on page 671, and the statement that aloes has no local action is doubtful. Further than this, the statement that aloes if used habitually may bring on rather grave hemorrhoids is hardly in keeping with another which immediately follows, to the effect that the principal use of aloes is as a purgative for habitual constipation; and again, after calling attention to the secondary astringent influence of rhubarb, it is stated that this drug is a valuable remedy as a simple laxative for children. We are told that the infusion, compound licorice powder, syrup and confection of senna are employed, but nothing is said about the fluid extract of this drug. Under the heading of croton oil it is stated that in lead colic this oil is probably superior to all other purgatives, which, while not absolutely incorrect, is a very broad statement which needs qualification.

The second edition has been improved by an article on the Untoward Effects of Drugs, which has taken the place of the previous one upon Definitions, and this article is accompanied by an exhaustively arranged table designed to elucidate the facts therein stated.

At the close of his preface the author earnestly requests any reader who may dis-

cover an error of whatsoever character to report the same to him promptly.

It is said that books to a large extent reflect the image of their author, or at least give an idea as to his personal characteristics. It is evident from this book that Dr. Butler possesses two great attributes of success—one is the ability to do a large amount of work, and another is to bring together many interesting facts. The fact that the book has reached a second edition within a comparatively short space of time indicates that his labors have been appreciated.

TREATISE ON THE SCIENCE AND PRACTICE OF MIDWIFERY. By W. S. Playfair, M.D., LL.D., F.R.C.P. Seventh American from the Ninth English Edition. Copiously illustrated.
Philadelphia and New York: Lea Brothers & Company, 1898.

It is now five years since the last English edition of this book appeared, and during that time the science of obstetrics has advanced with very extraordinary speed, and has at the same time broadened materially. It therefore became necessary for the author to thoroughly revise the present edition and to call to his aid a number of younger men, whose deft touches can be found in many portions of the work. The chapter upon Conception and Generation has been revised by Dr. Eden, a number of the illustrations have been taken from Crookshank's Bacteriology, and the proofs have been largely gone over by the cousin of the author, Dr. Hugh Playfair. These statements convey to the reader a clear idea of what Playfair's Obstetrics is in its seventh American edition. It has always been one of the most important works upon this subject, and it is to-day the text-book in many of the greatest and best schools in this country and England. Unlike other books revised by an author advanced in years, its text has been kept very well in touch with the advances which have been made.

A MANUAL OF THE DISEASES OF CHILDREN. By John Madison Taylor, A.M., M.D., and William H. Wells, M.D. Illustrated.
Philadelphia: P. Blakiston, Son & Co., 1898.

When we look at the preface of this volume we meet at first glance with what seems to us to be a contradictory statement, for we are told that the authors do not claim this book to be a treatise on the maladies of childhood, but that their aim has been to present in a clear and concise manner the chief points in the description, differentiation and treatment of the diseases of childhood! We are told that the authors do not attempt to offer much that is original or novel, and only obtrude their individual views when commenting upon the opinions of the great masters in the field of pediatric medicine!

There are twenty chapters in the book, beginning with the Physiology of the Infant and Child, proceeding to the diseases occurring at or near birth, and giving directions as to the care of infants and children. Chapter V is devoted to a discussion of the breeds of cows best adapted to infant feeding. After this is a chapter limited to artificial diets and recipes, and then follow those upon the diseases of the various organs, closing with others on the infectious diseases. The last two chapters are devoted to general considerations in regard to physical development and disease, and accidents requiring surgical procedures, which last is rather an innovation in a volume of this character.

It seems to us to be rather a mistake to have introduced a chapter upon Bubonic Plague, in view of the fact that the book is not supposed to discuss all the maladies of children.

An advantage gained by the reader of this volume is the fact that its authors have seen a large number of sick children through long connection with public institutions, and therefore the practical advice which they give is in many cases the result of adequate personal experience.

A MANUAL OF PHYSICAL DIAGNOSIS. For the Use of Students and Physicians. By James Tyson, M.D. Third Edition, revised and illustrated.
Philadelphia: P. Blakiston, Son & Co, 1898.

This is another one of the small octavo volumes which have been recently published dealing with physical diagnosis. It covers less than 300 pages and is evidently the outcome of Dr. Tyson's personal experience in teaching this important portion of medical learning. In other words, it contains just what the student needs without many additional facts, which, burdening his mind, would prevent him from remembering the main points which are of vital importance in the practical application of this subject. The illustrations showing the different forms of the malarial organisms are taken from Dr. Tyson's book upon Practice of Medicine.

This edition of Dr. Tyson's "Physical Diagnosis" deserves success and will doubtless receive the approbation which has been meted out to its predecessors and to his other contributions to medical literature. The price of the book is $1.50.

BRAITHWAITE'S RETROSPECT OF MEDICINE. Simpkin, Marshall, Hamilton, Kent & Company, Limited, London, 1898. January to June.

We have so often referred with words of praise to this very useful retrospect, or synopsis of current medical literature, that we need only remind our readers that another valuable volume covering the first six months of 1898 has issued from the press and that it in every way maintains the reputation already made by its predecessors.

TEXT-BOOK UPON THE PATHOGENIC BACTERIA. For Students of Medicine and Physicians. By Joseph McFarland, M.D. Second Edition, revised and enlarged. Illustrated.
Philadelphia: W. B. Saunders, 1898.

In the present edition we are told that chapters have been added dealing with the bacteriology of whooping-cough, mumps, yellow fever, hog-cholera and swine-plague, others describing the methods of determining antiseptics and germicides, of determining the thermal death point, and describing the gas-producing bacillus and the proteus vulgaris. One of the first things that strikes us is the fact that the type and the paper of this manual is much better for the eye than that which is found in some of its contemporaries, although it does not seem to us that all of the micro photographs are as useful in depicting what the author wishes to show as they might be. Nevertheless, as a means of bringing the student and physician in touch with the general points of bacteriology as they should be known to-day by the well informed medical man it seems to us that this volume fulfils its objects admirably.

TROPICAL DISEASES. A Manual of the Diseases of Warm Climates. By Patrick Manson, M.D., LL.D. (Aberd.). With 88 illustrations and two colored plates.
New York: William Wood & Company, 1898.

Dr. Manson's reputation as a student of tropical diseases is advancing with strides which are noteworthy, and he is bringing forward this important topic as a field of medical study in a manner which deserves great praise and which is receiving recognition not only in his own country but abroad. He is doing great good to medicine not only as a science, but to many persons in military and civil life who would otherwise be doomed to illness or death through lack of proper knowledge of the prophylaxis and treatment of maladies as they occur in hot countries. His small octavo volume is divided into sections dealing with Fevers and General Diseases of Undetermined Nature, as Beriberi, Epidemic Dropsy and Sleeping Sickness, Abdominal Disease, Infective Granulomatous Diseases, Animal Parasites and Associated Diseases, Skin Diseases, and Diseases of an Uncertain Nature. Why there should be two separate sections dealing with "diseases of an undetermined nature" and those of an "uncertain nature" is not clear to us. Attractive portions of the volume are not only its dealings with the pathological aspect of the subjects discussed, but also with treatment, and as it is a manual written by one who is thoroughly in touch with his subject we doubt not that it will prove very popular. After one has looked over its illustrations a feeling of thankfulness arises that whatever diseases we may be exposed to in this temperate climate we at least escape some of the frightful maladies which Dr. Manson depicts so clearly.

ENCYKLOPÆDIE DER THERAPIE. Herausgegeben von Oscar Liebreich. Unter Mitwirkung von Martin Mendelsohn und Arthur Würzburg. Zweiter Band, III. Abtheilung.
Berlin: Verlag von August Hirschwald, 1898.

The present fasciculus extends from the middle of the article upon Hydronephrosis to that on Tumors of the Breast and covers a range of subjects which can only be considered therapeutic by accepting that term in its widest sense. The term therapeutic is, however, justified as it was in the previous fasciculi by the fact that the authors have endeavored to show how by a clear understanding of the disease these remedial measures may be properly undertaken. As in earlier volumes the authors will be recognized as being men who speak with authority. To those of our readers who can read German, we heartily commend this valuable encyclopedia.

HAND-BOOK OF MATERIA MEDICA FOR TRAINED NURSES. By John E. Groff, Ph.G.
Philadelphia: P. Blakiston, Son & Co., 1898.

This is a small octavo of a little over 200 pages, dealing with elementary facts in regard to Materia Medica, Pharmacy, Therapeutics, and Toxicology. From it the nurse is supposed to learn the official names of preparations, their doses, the symptoms produced by overdoses and the antidotes. A copious glossary arranged alphabetically reviews to a large extent the previous text in the book, and the chapters all end with a summary designed to fix in the mind what the pupil has learned, in question and answer form.

A MANUAL OF OTOLOGY. By Gorham Bacon, A.B., M.D. Illustrated.
Philadelphia and New York: Lea Brothers & Company, 1898.

This is a small octavo volume of a little less than 400 pages, dealing with the principal facts in otology, freely illustrated when necessity for illustration exists, the pictures being taken from other works and from the experience of the author, and in addition a colored plate showing an abscess of the cerebellum following chronic suppurative otitis. Many pictures of instruments are included. The object of the author has been to present his text in such a way that it would prove of interest not only to the specialist, but to the general practitioner. Dr. Bacon believes that the general practitioner knows too little about and pays too little attention to diseases of the ear, not only for his own sake, but also because trouble in this organ is so frequently followed by serious lesions in the central nervous system.

ELEMENTS OF HISTOLOGY. By E. Klein, M.D., F.R.S., and J. S. Edkins, A.M., M.D. Copiously Illustrated. Revised and Enlarged Edition.
Philadelphia and New York: Lea Brothers & Company, 1898.

This edition, which bears Dr. Klein's signature of 1898, keeps the text of this well known book upon histology closely in touch with the recent researches in this branch of medical study. The extraordinary advances which have been made in regard to the structure of the central nervous system and the sensory organs by Golgi, Cajal and others have made it necessary for a large part of the text to be revised, and most of this work has been done by the assistant author, Dr. Edkins. Many new illustrations have also been introduced. Unlike many books published in as condensed a form as this the illustrations are unusually good, and there is every reason to believe, because of the care taken upon its revision, that the volume will continue to have its popularity among teachers and students.

A COMPEND OF DISEASES OF THE SKIN. By Jay F. Schamberg, A.B., M.D. Freely illustrated.
Philadelphia: P. Blakiston, Son & Company, 1898.

This book is a part of the quiz compend series, published by the Blakistons, which have been before the profession for so many years, and deals with the elementary facts in dermatology which it is necessary for the ordinary student to know, particularly in those schools where some knowledge of the specialties of medicine are required in those who desire to graduate. A rather unusual characteristic of the volume is the fact that most of the illustrations seem to be taken from photographs of patients who have been directly under the author's care.

Considering the size of the book, ample attention is given to the subject of treatment.

LABORATORY WORK AND PHYSIOLOGICAL CHEMISTRY. By F. G. Novy, Sc.D., M.D. Second Edition, revised, enlarged, and illustrated.
Ann Arbor: George Wahr, 1898.

This book is designed for directing laboratory work of medical students and in showing them how to study the physics and physiology of the digestive functions of the blood, the urine and other substances which the body contains normally, or which it speedily eliminates as effete material. The second edition has appeared within a very short time after the publication of the first. The first chapters deal with the fats, the carbohydrates and proteids. Then follow others upon the saliva, the gastric juice, the pancreatic secretion, the bile, blood, milk, and urine, while the closing chapter deals with a list of reagents.

While the book is manifestly designed for the use of Dr. Novy's own students, we doubt not that other teachers will find it a valuable aid in their work. At the close of the volume are a number of illustrations of the various sedimentary substances found in the urine, taken from the work of von Jaksch.

A MANUAL OF CHEMISTRY. By W. B. Simon, Ph.D., M.D. Sixth Edition, thoroughly revised. Illustrated with colored plates and engravings.
Philadelphia and New York: Lea Brothers & Company, 1898.

That six editions of Dr. Simon's Chemistry should have been called for within the space of, comparatively speaking, a few years indicates that he has a knack of arranging chemical knowledge in a form which is easily assimilated and which will prove valuable to both teachers and students. To those who are unfamiliar with previous editions we may state that the book first deals with the fundamental properties of matter and with general questions of physics. Then non-metals and their combinations, and metals and their combinations, are discussed. Finally, the latter portion of the book is devoted to analytical chemistry with the consideration of carbon compounds and physiological chemistry. The very last pages are devoted to tables of weights, measures, and elements.

The colored plates, all of which have been prepared with the greatest possible care, as is evident from their neat arrangement, will prove exceedingly valuable to the student working in the laboratory, since by this means he can at once identify his reactions in a far easier way than if the color changes were simply described in words rather than pictured in colors. The portion of the book dealing with the newer chemical compounds, which are now used so frequently in medicine, is particularly interesting to the modern physician.

Correspondence.

LONDON LETTER.

By Raymond Crawfurd, M.A., M.D. Oxon., M.R.C.P. Lond.

The summer holidays are now at an end, and the inaugural ceremonies at the various medical schools are in full swing. Charing Cross Hospital presents attractive fare to its novitiates in the form of a public lecture by Professor Virchow, who will afterwards be entertained at dinner by a distinguished medical company. To those who disparage the professional man of modern medical London it will come as a surprise that the lecture is far more in favor than the dinner—be it granted however that the lecture is free, and the dinner to be consumed only upon payment of a guinea. On the whole there is a remarkable absence of substantial changes to record in the hospitals themselves since this time a year ago. One noteworthy feature is the extensive building in connection with the London School of Medicine for Women, which has been necessitated by the very rapid growth in London of the movement for the education of women in the study of the healing art. A few years ago the medical woman was a mere object of detestation to her professional brothers, and only to be tolerated so long as her services were devoted to the dissemination of Christian knowledge, and not to the quest of commercial gain. Now all this is past, so far as London is concerned, although the same battle is being fought out successively in the provincial towns, and a fair livelihood is open to any competent medical woman.

Dr. Carstairs Douglas contributes some interesting notes to the *Glasgow Medical Journal* of a case of malignant disease treated by nuclein. This therapeutic agent has not at present found much favor with the profession on this side of the Atlantic. Dr. Douglas employed nuclein in the hope of relieving the toxic cachexia, inferring the likelihood of its usefulness from the benefit obtained in other diseases in which toxemia is a prominent feature. The patient was a cachectic woman of thirty-eight, who had previously undergone vaginal hysterectomy for uterine cancer, and in whom a recurrence had shortly appeared in the right iliac fossa. Pain was great, but was mitigated by constant use of morphine; anemia and feebleness were extreme, and leucocytosis excessive, so that any benefit to be derived from the nuclein should have been due rather to some inherent chemical activity of the substance than to its alleged property of increasing the number of polynuclear leucocytes. The preparation employed was a five-per-cent. solution of pure nucleinic acid from yeast, supplied by Parke, Davis & Co., and was administered by the mouth. The solution was a brown liquid of strongly acid reaction, with the odor and taste of cresol, due to the preservative cresol it contained. A small teaspoonful was given three times a day, between meals, and well diluted. The chief clinical interest of the case centers in the condition of the urine, which was carefully noted both before and during the administration of the nuclein. In the first instance the daily urea excretion was 9.09 grammes, or less than one-third of the normal, while the uric acid excretion was 4.354 grammes—that is to say, nearly eight times the normal daily amount. Phosphoric acid was represented by a daily output of 5.21 grammes. The diminished urea output was probably due to the essentially non-nitrogenous diet, aided perhaps by secondary growths in the liver, which may have disturbed the urea-forming function of the liver. The uric acid excess and the increased phosphoric acid were no doubt derived, as Horbaczewski has shown, from the nuclei of the disintegrated leucocytes. After the nuclein had been administered for a fortnight, chemical examination of the urine showed a daily increase of uric acid to 4.876 grammes, while the urea and phosphoric acid remained at much the same level. It is a reasonable inference that the increased uric acid was derived from disintegration of the nuclein within the body. At first the patient seemed to derive some general betterment from the treatment, but it was at no time marked, and after a short time a steady de-

terioration set in and persisted until death. The administration of the drug by the mouth seemed to be quite free from ill effects, and at no time was there any gastric or other digestive disturbance assignable to the nuclein; nor was there any suggestion of gouty disturbance, a fact which points to defective elimination by the kidneys as a probable factor in inducing deposition of urates from a condition of uricacidemia.

One is often asked to recommend a health resort for a subject of gout or rheumatism. There is a deep-rooted insular prejudice in this country among the laity in favor of the seaside for convalescence from every ailment. Dr. Hobhouse has studied attentively the relation of the seashore to gout and rheumatism, and also the efficacy of salt baths in these conditions. The views he recently communicated on the subject to the British Balneological and Climatological Society are well worth consideration. He believes that sea air as such has little effect on rheumatic troubles apart from the question of dryness of the soil, the prevailing winds, the amount of precipitation and of sunshine, and the aspect of the place. Thus it becomes a question rather of the individual seaside resort, than between seaside and inland. In the autumn, when damp fogs prevail inland, speaking generally the seashore will be found drier and therefore more suitable; while in the spring, when east winds run riot, inland resorts will be less exposed to their influence than the seaside. For a winter resort for rheumatic subjects, a dry soil and one that absorbs moisture quickly is all-important. Such a soil is that of Egypt. It is easy to gauge the influence of any climate or locality on rheumatism, because rheumatic manifestations are almost invariably accompanied by pain, and therefore impress themselves on the subject.

The promoters of aspiring health resorts would do well to lay to heart Dr. Hobhouse's timely warning, that the reputation of a health resort is best maintained by a frank statement of the conditions for which it is unsuitable, as well as those it suits. The revilings of one patient who has been victimized do more harm than can be counterbalanced by the commendation of the many who may have reaped its benefits. Comparison of the statistics of acute and subacute rheumatism in Brighton, Hastings and Plymouth shows a percentage incidence almost identical with that of the large London hospitals; from which it would seem that the sea as such has no special influence on these forms of rheumatism. Hobhouse summarizes his conclusion that marine climates are not indicated in the treatment of rheumatic affections, though patients in a weak and anemic condition, after acute and subacute attacks, often benefit greatly from the tonic influence of the air and do not tend to relapse. On the other hand, the health statistics of British seaside towns all point to the prevalence of chronic rheumatism. It is interesting to find the relation between the prevalence of acute and chronic rheumatism so distinctly negatived. The prevalence of rheumatism at the seaside is a matter of supreme importance in England, where boys and girls from all parts of the country are congregated together in seaside schools. Dr. Hobhouse gives it as his experience that the slight and abarticular forms of rheumatism, which are so common in children, and so often unfortunately linked to disease of the endocardium, are benefited by seaside residence. With regard to gout, especially in its outspoken forms, nearly all physicians will agree with Dr. Hobhouse that those with any active symptoms are far better away from the sea altogether, and if they get an attack there, should get away as soon as possible afterwards.

It is perhaps open to question whether acute rheumatism is materially influenced by any other treatment than that which Nature herself imposes on the subject, viz., rest. Whether salicylates cut short an attack is still an open question, and even if their usefulness be conceded there are many that maintain the superior efficacy of the old combination of quinine and an alkali. But to Mr. John O'Conor has it been left to decide "that surgery is a curative agent in acute rheumatism, and that the sooner the latter term is dropped and acute infective arthritis substituted, the sooner shall we be in a position not only to better understand the complaint, but to more successfully combat it by prompt operative measures." These deductions, if we may trust the short notes communicated to the *Glasgow Medical Journal*, appear to be derived from two cases, in neither of which can we satisfy ourselves of the existence of acute articular rheumatism. To use a seeming paradox, acute rheumatism is essentially a chronic disease—that is to say, a patient in whom the disease has once manifested itself is always liable to recurrence. Mr. O'Conor does not tell us whether his drastic treatment prevents recurrence, or whether at each recurrence the operative measures are repeated.

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